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SECTION 10

Heating Systems: Conventional and Solar (Monitoring)

TRANSCRIPT OF PROCEEDINGS
(con't)

Volume 10

Pages 1562 Through 1722

June 3, 1975

TUESDAY, JUNE 3, 1975

The hearing reconvened at 9:00 A.M. on Tuesday, June 3, 1975, in the Chambers of the Montana House of Representatives, State Capitol, Helena, Montana.

The Honorable Carl M. Davis, Hearings Examiner, presided over the proceedings.

APPEARANCES:

APPLICANTS

William M. Bellingham, Esq.
John Ross, Esq.

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Arden E. Shenker, Esq.
Robert T. Cummins, Esq.
Ted Doney, Esq.
Donald McIntyre, Esq.

NORTHERN PLAINS RESOURCE COUNCIL

Gregory Warner, Esq.

ENVIRONMENTAL DEFENSE FUND, INC.

James Goetz

HEARINGS EXAMINER: Are the parties ready to proceed?

MR. BELLINGHAM: The Applicants are, sir.

MR. SHENKER: The Department is ready.

MR. WARNER: Northern Plains Resource Council is ready.

HEARINGS EXAMINER: Very well, Mr. Shenker, you may proceed with the cross-examination of Mr. Hofacker.

MR. SHENKER: Thank you, Mr. Davis.

CONTINUATION OF EXAMINATION OF ROGER A. HOFACKER

Cross-Examination by Department of Natural Resources & Conservation

By Mr. Shenker (cont.)

Q Mr. Hofacker, have you had an opportunity since our recess last night to complete the reconstruction of Exhibit No. 10?

A Yes, sir, and I have given it to Mr. Bellingham. I have put it on both copies in there.

Q What you have actually done is to draw in the individual months of the year in order to get your lines down for those months?

A Yes, sir.

Q Good. Keep doing that. Taking a look at Exhibit #9, Mr. Hofacker,

A Yes, sir.

Q The base load which you show on Exhibit #9, for the year 1974, appears to stop in its nice little parameter arc and to make a jog in a lateral direction. You see that?

A Yes, sir.

Q Do we understand that to mean that your projection for your energy loads from 1974 through 1977 showed very little growth at all?

A Yes, sir.

Q But, then, from 1977 to 1980 you expect the growth to be sufficiently great to pick up where you left off as if there had been no lateral jog at all between '75 and '77?

A Yes, sir.

Q Is there any time between the 1952 and 1974 where, if you had constructed a base load from actual data, you would have had the same kind of lateral jog that you are talking about

1 now from '74 to '77?

2 A It appears that as you look at the base load curve that you

3 might have said that the 1952 through 1954 looked like that.

4 And the '56 through '58 somewhat resembles that.

5 Q What have been the years of greatest increase over a period

6 of more than a year, which are reflected on the base load

7 shown on Exhibit 9?

8 A The years of greatest increase?

9 Q Yes, sir.

10 A '54 to '55 to '56 -- '60 to '61 -- '70 to '71 has increased

11 greater than the curve would indicate.

12 Q Is it not true, Mr. Hofacker, as you look at exhibit #9, that

13 what you are projecting from the years 1977 to 1980 is the

14 largest increase over a similar three year period than at any

15 time in the last 28 years?

16 A Yes, sir, and this results from this recession, according to

17 our marketing people and according to what we read may be as

18 bad as any time and that the depressed lumber, depressed copper,

19 etc., can very well come back if the needs of the 1980 are go-

20 ing to be met by those people establishing homes in that period

21 of time, etc.

22 Q Well, in terms of establishing homes, for example. I think

23 you told us the other day, last week under direct examination,

24 that the population age group that you look at most for resi-

25 dential growth in establishing homes is the age group from 20

26 to 35?

27 A In that age. Yes, sir.

28 Q What is the relative population in that age group today as

1 compared to that age group ten years ago?
2 A I don't know. I would have to refer to it. I just don't
3 know.
4 Q You know of the phenomenon, generally called the "War Babies
5 Boom"?
6 A Yes, sir, and you are referring to World War II, Korean War
7 and --
8 Q Right, we are about over the War Baby boom in that age group
9 you refer to as the greatest potential, aren't we?
10 A We are over the War Baby boom for the World War II. We are not,
11 we are just getting into the Korean War.
12 Q Right. You know what the relative population ages are from
13 those who would be 20 years out past the Korean conflagration
14 as compared to those who would be 20 to 25 years out from the
15 World War II?
16 A Well, sir, I said, I don't know.
17 Q Has such a study ever been done inside the Montana Power Com-
18 pany?
19 A I'm sure we have looked at this, but I don't recall the rela-
20 tive numbers at this time.
21 Q You have some written information on that?
22 A I have seen information on that and I don't recall just where,
23 but somewhere in the publications it must be.
24 Q In the publications of the Montana Power Company or general
25 periodicals?
26 A General periodicals and reports that are issued in the industry
27 for the nation as a whole.
28 Q But nothing in the state of Montana or the Montana Power Company

system?

A Yes, I think there has been some compilations on Montana Power Company system. I believe in some of our publicity, we alluded to the number of people attaining the age of 21 by 1980 or during the '70's. Something like a hundred thousand or some such figure as that.

Q As compared to other times in which people have reached that age in Montana?

A No, it didn't compare it to other times. It just looked to the future from this time.

Q Then you know of no studies by the Montana Power Company that would compare the population base within the age group we have discussed among the years 1960, '70 and '80?

A I am not aware of such.

Q Can you tell me in percentage terms, Mr. Hofacker, what annual growth you project in your calculations as reflected on Exhibit #9 between the years 1977 and 1980?

A I did that once. Let me see if I have my numbers here. No, but I do have what our growth from '75 to '85 as shown here, 756 to 856 and that is just under 5½ - 5.45.

Q Let's see if we can break it out a little bit then. From 1974 to 1975, according to Exhibit #9, you project a little bit less than zero growth. Is that right?

A Yes, sir. That's on the base load.

Q Yes, from 1975 to '76, what is it? About 2%?

A It might be that, yes.

Q Not much more than that.

A No, sir.

Q 1976 to 1977, perhaps 3%?

A In that area, yes.

Q So, in order to get up to 5.5% over that total 5 year segment, we are going to have to have some pretty high percentages to make up for those lower averages?

A Yes, sir.

Q In fact, from 1977 to 1980, you are talking about a growth of 33 1/3 percent over a three year period, aren't you?

A 33 1/3 percent? Let's see, we are going from 470 to about 640, that's about 30%, about 30 and a third, yes, sir.

Q What does that compound to? Something less than 10% a year for those three years?

A Something less than 10%.

Q More than 9?

A I would think more than 9.

Q During that same time, Mr. Hofacker, you are projecting a total load in the year 1976, which appears to have a discrepancy between the base load and the total load of from 470 to to 690 megawatts or 220 megawatts. Is that the way you read that?

A Yes, sir.

Q Is there any time reflected on your Exhibit #9 in which you have that large a discrepancy between your base load and your total load?

A By discrepancy, you mean differential rather than discrepancy?

Q Yes, the difference between the base load and total load?

A Well, in 1955 it approaches that. In 1956 it is in that general area. In 1966 it is in that general area.

1 Q Let's take a look at those and see if any of those are 290
2 megawatts.
3 A 290 -- I take it back. I was talking around 200 and some and
4 I thought that was what we were looking at here.
5 Q Maybe I misspoke myself. We have the difference between 470
6 and 690 and that is a difference of 220.
7 A Yes, sir, 220 and that is what I was looking to.
8 Q OK, so you have in 1955 a difference of from 180 to 360 mega-
9 watts, that's a 180?
10 A Well, I -- that looks like more than 360, I was thinking more
11 like 370 or better. But anyway --
12 Q Alright -- what is the other one that you thought would ap-
13 proach 220?
14 A 1966 is in excess of 200.
15 Q Base points are right on the 300 and 500 megawatts, aren't
16 they?
17 A My plotting looked like it was a little over 500, but, give
18 or take 10 or 20.
19 Q There may have been some years which were within almost 10%
20 of 220 megawatts differential, but there is no year reflected
21 on your history since 1952 in which the difference between the
22 base load and total load is as much as you now project for
23 1976?
24 A Yes, sir, but there are several that are close.
25 Q 1977, of course, is just a little bit more than perhaps 1976
26 in terms of differential between base and total load?
27 A Yes, sir. We in the Engineering Department and Operating
28 Department are of the opinion that the 1977 base load may be

1 too conservative. In discussing with the marketing people,
2 etcetera, why we indicated our loads in that manner.
3 Q And you are guided by that?
4 A They are part of the decision, yes, sir. I think the recent
5 news indicates that we are going to come out some sooner than
6 we had anticipated, but that remains to be seen.
7 Q We talked some yesterday, Mr. O'Connor, about population.
8 A Well, that's two for me now. That's "Mr. O'Connor" twice.
9 I'm keeping tabs here. (Laughter)
10 Q It's going to get to be more fun when there are more than two
11 witnesses on the stand, multiple choice of who we pick.
12 A We will wear name tags.
13 Q Your population in the years from 1964 to 1974 have been esti-
14 mates, have they not?
15 A Yes, with our meter hookups and also tying in with the U. S.
16 Census Bureau numbers.
17 Q Can you tell me, Mr. Hofacker, in the last five years, that
18 would be between 1969 and 1974, what has been the overall
19 population growth of your service area?
20 A I will look at the same sheet I believe you are looking at.
21 Q It will be helpful since I got it from you?
22 A That's right. That's for the period of 1970 - 1974?
23 Q 1969 - 1974, the last five years.
24 A 1969 - 1974 -- close to 15,000 people.
25 Q And that is out of a total of 595,772 that you estimate in
26 1974?
27 A Yes, sir. We started with 58,000 plus and wound up with 59 --
28 or with 580,900 and wound up with 595,700.

1 Q What is that population increase on a percentage basis over
2 that five-year period?
3 A It is up 15 -- wait a minute, no -- no, it is about 15,000,
4 about 3%.
5 Q Three percent over five years?
6 A Yes, sir.
7 Q What would that be on an annual basis?
8 A Very, very low; but when you look from '73 to '74, we had like
9 a 4% in one year.
10 Q That is the result of a fluctuation in population over the
11 years in Montana, is it not?
12 A Well, after '69 we had quite an outflow of population as I
13 recall from the state; and starting with 1970, you can see
14 from 1969 to 1970 we lost 51,000 people. But starting in
15 '70 there has been a steady growth since 1970 and we have
16 grown like 14% in that 5-year period.
17 Q Fourteen percent in a five-year period would be less than
18 3% a year, would it not?
19 A Yes, sir.
20 Q Take the five-year period from 1969 to 1974 would be even
21 smaller, would it not?
22 A Yes, because we were at a peak in '69, then lost a lot of
23 people.
24 Q In fact, if you take the data that you over the last ten
25 years in which you did your estimating the service area of the
26 state of Montana for the Montana Power Company, you find no
27 year in which the increase was as much as 4%, isn't that true?
28 A Well, '66 to '67 was about -- I take it back -- yes, sir.

1 Q Those estimates were in the cases of 1964 - 1969, based upon
2 1960 Bureau of Census report and your meter connections; 1970
3 to 1974, based upon the Census report of 1970 and your meter
4 connections?
5 A Yes, sir.
6 Q You have Load Forecast Books that are routinely made within
7 the Montana Power Company, do you not?
8 A I don't understand the term "books" necessarily, but we have
9 load forecasting published in memorandum type form.
10 Q If you look at your notes, Mr. Hofacker, entitled "Load Fore-
11 casting Procedure" with the term "STU's" at the top of the
12 page, third page, item 6 -- it is a memo from Wally Blankmeyer
13 My copy says January 29, '70 something or other, but the last
14 year is blanked off --
15 A I was just looking at it last night when putting these together
16 and I remember seeing that particular one and now -- the date
17 you say is not legible?
18 Q Only the January 29, 70 something part is legible. Why don't
19 you look at mine?
20 A Yes, sir. I have it here.
21 Q You don't know what the date of that is, do you? Kind of
22 blanked off there at the bottom.
23 A No, I think that it is probably fairly recent.
24 Q Item number 6 on the third page says, "Load Forecast books
25 are issued to Corette, O'Connor, Rath, Hofacker, Evans and
26 Blankmeyer.".
27 A These are a series of sheets, sir.
28 Q Books are a series of sheets?

A Series of sheets, yes,sir.

Q The same sheets you get, I take it, are issued to Mr. O'Connor?

A Yes, sir. Now, this is some years back this was written; but that is true, we update the sheets and give them to the various people for their use.

Q As that memorandum describes, the energy which was forecast for load is as you have described in terms of your base load and you have to add on your block load, which is primarily Anaconda?

A Yes, sir.

Q The way you add on Anaconda according to item #7 on the third page of that memorandum, customarily is to determine from various sources what Anaconda additional loads you can reasonably expect, then get general approval of the data?

A Yes, sir.

Q Once you have established such a load growth, then the load forecast is routine matter?

A Yes, sir, until there are some more changes.

Q Okay and the changes are part of the routine?

A They are that.

Q Now 1970, Mr. Hofacker, Mr. Hedegard's memorandum on load forecast procedure projected at that time a 5.6% rate of growth on a compounded annual basis. Isn't that right?

A I believe that to be true. I saw that form in here,too.

Q With respect to the Anaconda Company for your block load, your general contract with Anaconda grew at a 2.8 percent compounded rate, normalizing strikes?

A Yes, sir.

Q And your firm load estimate for long term planning, at the same time, you projected at 4.9%?

A Yes, sir, because that had been the 1961 to 1969 average energy growth.

Q On a strike normalized basis?

A Yes, sir.

Q Then in 1970, your interruptable loads were tabulated between energy and peak, projected from 1970 through 1995, were they not?

A Yes, sir.

Q And that shows an interruptable load in 1975 of 20 megawatts for energy and 22 megawatts for peak?

A Yes, sir.

Q And that grows until 1985 to be 34 megawatts of energy interruptable and 39 megawatts for peak interruptable?

A Yes, sir:

Q Now, if you look at that growth between 1975 and 1985, you have fourteen additional megawatts for energy on an interruptable basis. So over that 10 year period, you would have approximately 70 percent growth in interruptable load for energy. Is that right?

A Yes, sir.

Q Compounded to about 5 percent?

A Approximately, yes.

Q And in peak you would have a growth of from 22 to 39 megawatts, over that same ten-year period, for a growth of from 17 megawatts or almost an 80 percent growth?

A Yes, sir.

Q So that over that ten-year period, you are talking about something closer to 7 percent on a compounded annual basis?

A I think it is less than that. If I am not mistaken, I think 10 percent doubles the size in 10 years -- or 7 percent doubles the size in 10 years, I believe -- compounded.

Q Then we are not quite --

A So we are --

Q Something less than 7%?

A Yes, maybe something like 6.

Q Somewhere between 6 and 7?

A Well, yes, because six percent doubles, I believe, in about twelve years. So this is ten years, and about 80%, so six is in the area. Yes, sir.

Q Yesterday we were looking at your various load projections from 1966 to 1975 and I think we forgot to look at the one between 1966 and 1972, which would be 1970?

A Yes, sir.

Q If we compare your 1966 and 1970 firm load estimates for resource expenditures, prepared by Mr. Hedegard on August 17, 1970, with your firm load estimate for 1966 to 1980,prepared by Mr. Barker on April 19, 1966, do we find any differences between 1975 peak as projected in both of those estimates?

A Yes, you will. But I believe you are comparing the wrong charts.

Q Why is that?

A Because the 1966 chart was a long-term planning and the one you should be comparing of Hedegard's is the firm load estimate entitled "Long-term Planning."

1 Q What's the difference between the firm-load estimate for
2 long-term planning and firm-load estimate for resource expen-
3 ditures?
4 A The resource expenditures is when we get in close enough that
5 we put up the hard dollars. That we look at the more conser-
6 vative at that time we really commit. The long-term planning
7 is when you look at what you are going to be exposed to in
8 growth.
9 Q I wanted to find out about that differential. So let's take
10 first the firm-load estimate for long-term planning that Irv
11 Hedegard did on August 17, 1970, and compare that one with the
12 one Barker did on April 19, 1966 for peak megawatts in 1975.
13 A Okay, 1975 -- well the peak '75 - '76 in the 1966 estimate is
14 1092. And in the -- it's 1022 in the long-term planning.
15 Some 70 megawatts less.
16 Q Reduction of some 70 megawatts?
17 A Yes, sir.
18 Q And if you take 1980, the last year in the 1966 estimate, then
19 you have a reduction from 1979-80 of 1319 megawatts to 1248
20 megawatts, a reduction of some 71 megawatts?
21 A Yes, sir. Let's see -- you are talking 1980-81 now, aren't
22 you?
23 Q There is no 1980-81.
24 A I agree - it's 1385 down to 1313, yes, sir. Or a difference
25 of 72.
26 Q I think you are looking at the wrong line.
27 A Oh, maybe I am -- 18 -- 19 --
28 Q 1979-1980?

1 A Oh, '79-'80. Excuse me. There is 1319.

2 Q That's down to 1248?

3 A '79-'80 was on this one -- was 1248.

4 Q Okay. I believe yesterday we skipped from 1966 to 1972. Not

5 only put 1970 into the mix; let's look at the difference be-

6 tween 1970 and 1982, again on the long-term planning. Mr. Hede-

7 gard's 1972 firm-load estimate, revised February 2, 1973, is a

8 long-term plan, isn't it?

9 A Yes, sir.

10 Q Okay, let's compare 1975-76 year on those two respective fore-

11 casts, one in 1970 and one in 1972?

12 A 1975-6?

13 Q Yes.

14 A 972 feet versus 1,022; 50 megawatts less.

15 Q Went down from '66 to '70 and went down from '70 to '72?

16 A Yes, sir, and for the reasons I have enumerated a couple of

17 times before.

18 Q Okay. Now let's compare the firm-load estimate for resource

19 expenditures with the firm-load estimate to long-term planning.

20 They were both done in August of 1970, were they not?

21 A They were.

22 Q And if we look at the year 1975-76 --

23 A Yes, sir.

24 Q According to the long-term plan you would have a peak of 1,022

25 megawatts and according to the firm-load estimate for resource

26 expenditures, you would have a firm peak load of 1004 megawatts?

27 A Yes, sir; a difference of 18.

28 Q Now, what do you currently project as your firm load for peak in

1975-76?

A Look at the table here --

Q That is down even below what was your firm resource expenditure in 1970?

A Yes, sir.

Q Wouldn't we conclude, Mr. Hofacker, from seeing the difference between the 1970 firm-load estimate for resource expenditures, which you told us is the one that you think is pretty close to the mark of what you are going to actually have to have, and the firm-load estimate for long-term planning for 1970, that the better guide is the firm-load estimate for resource expenditures?

A I would presume so.

Q Yeah, that's the one that pretty well hues to the mark of what you actually have anticipated, isn't it?

A Well, part of the reason for those two --

Q Isn't that true, first?

A Yes, sir. The reason for those two revised at that time and we are not doing that now, is because the Anaconda Company could be assumed to be in a state of indecision as to what was going to happen at that time. So we had a conservative one -- we had the long-range planning and then we had one that was conservative that we knew that they would probably not be less than that.

Q As we come up to date in your load forecasting, there are various ways you try to correlate to your load and one of those is the gross national product. Is that right?

A Yes, sir.

1 Q How do you plug the gross national product into your load
2 forecast on a formula or mathematical basis?
3 A We tried to correlate gross national product and were unable
4 to do so, sir.
5 Q Another correlation is the Consumer Price Index. Would that
6 be with the U. S. Department of Commerce?
7 A Yes, sir, and we went over our past history and had difficulty
8 in finding any firm relationship. Although we assumed there
9 must be one, we couldn't find it.
10 Q And the third correlation you tried for was with National
11 Disposable Personal Income?
12 A Yes, and I have heard that this is supposed to be a pretty good
13 index to refer to and we had difficulty relating that to our
14 actual load; it would correlate in some areas and other areas
15 it would not. But we tried it.
16 Q Then your other attempted correlations are fairly minor kind
17 of indicators, aren't they?
18 A Yes, sir.
19 Q In your direct examination by Mr. Bellingham, you discussed,
20 Mr. Hofacker, natural gas prices?
21 A Yes, sir.
22 Q Do you know what the average natural gas price was which the
23 Montana Power Company charged to its customers last year?
24 A No, sir, I would have to look at our statistics to find that.
25 Q Would you accept an average revenue from the sale of natural
26 gas at $1.03 per thousand cubic foot for residential service,
27 .84 per thousand cubic foot for commercial service and .56 per
28 thousand cubic foot for industrial service?

A Sounds alright to me.

Q Now the cost of your natural gas, as of the end of last year, varied as to whether you were receiving that natural gas from your own reserves here in Montana or from your Canadian operations. Isn't that right?

A Yes, sir.

Q And that cost last year was at 40 cents per thousand cubic foot from Montana gas and 64 cents per thousand cubic foot for Canadian gas?

A Those numbers sound right.

Q Canadian gas is now up to a dollar per thousand cubic foot?

A Yes, sir.

Q What's the cost of the Montana gas today?

A I don't know.

Q Okay. What were your sales of natural gas last year?

A I am not conversant with those figures either, sir. I think it is in the area of 50 - 60 billion feet.

Q For the year 1973, would you accept 57,592,000,000 cubic feet?

A Yes, I would.

Q Alright. What were your reserves in Montana alone from natural gas last year?

A I don't know, sir.

Q Would you accept 190,000,000,000 cubic feet?

A Might well be. I have no basis on which to dispute that number.

Q Out of a total reserve of 962,000,000,000 cubic feet, including Canadian?

A Might well be, yes, sir.

1 Q Do you know, Mr. Hofacker, that the Montana Power Company has
2 an application for the extension of its import of naturalsgas
3 from Canada to allow for the importation of 19,892,000,000
4 cubic feet annually?
5 A I am aware we have such an application. I am not positive of
6 the numbers. They don't sound wrong.
7 Q Do they sound right?
8 A I think they do.
9 Q That would be out of a total of 518,000,000,000 cubic feet of
10 reserves in Canada?
11 A I think those numbers sound reasonable to me.
12 Q As I understand the state of your direct testimony with re-
13 spect to conservation, as you have studied it, you looked at
14 it last fall and you couldn't determine the effect but you
15 know that there was some?
16 A We are sure that there must have been some.
17 Q And you're all the more sure that conservation did have some
18 effect on peak, at least before February of this year?
19 A Well, it was much more evident to us for the '73-'74 winter
20 season than it was for the '74-'75. We are not sure there
21 was any conservation in '74-5.
22 Q And that had something to do with your traveling about by an
23 airplane, wandering into Butte at night around the Christmas
24 season, saw all the Christmas lights on and you weren't sure
25 there was much conservation going on?
26 A I do quite a bit of travel by commercial airlines, sir, and
27 seeing by night the Christmas lights were on.
28 Q Did you do a study as to the equivalent commercial use around

1 Christmas season 1974 versus 1973?
2 A Not a study as such. As I have previously testified, we tried
3 to reconcile as to what the actual load was as compared to
4 what we thought it would be.
5 Q As far as the Christmas lighting aspect was concerned, that
6 you kind of eye-balled, but you didn't do any additional study?
7 Is that right?
8 A Well, in discussion with other -- our divisions -- it appeared
9 Christmas lighting was about back to what it had been. And
10 that is by not going out and counting or anything like that.
11 Q Just sort of a feeling around the division?
12 A Yes, sir.
13 Q Conservation, you told Mr. Bellingham last Wednesday at the
14 end of the day, was terribly clouding of the issue of load
15 forecasting. Do you recall that?
16 A Did I say "terribly clouding"?
17 Q You said "terribly clouds the issue."
18 A I may have said that. I would think I was thinking the issue
19 of conservation was terribly clouded as to just what effect it
20 did have.
21 Q What affect it would have on the use of energy?
22 A Yes, sir.
23 Q If that is cloudy as an issue, does it not cloud the issue of
24 what your loads will be and the extent conservation will af-
25 fect them?
26 A Yes, but there are degrees that it affects. We found little
27 evidence of conservation, so it would have minor effect in
28 looking to the future. If we had found an evidence of siz-

able variations or decreases due to conservation, it would have a greater affect on our forecasting.

Q Since this conservation issue is terribly cloudy at this point, don't you think it would be a good idea to investigate studies that have been done nationally on the effect of conservation on load growth?

A We have and it varies in every area of the country.

Q Do you have a single written memorandum within the Montana Power Company that appraises or evaluates the effect of conservation on load growth?

A I believe I saw a hand written one somewhere. It appeared that it had been '73, '74, that it had an affect on the peak but that the effect on the energy was - we were unable to detect. I think there was some handwritten thing I saw like that.

Q There was a hand handwritten note like that among the notes you had when you testified. I mean a study, memorandum, done within the Engineering Department, the Planning Division, that seriously evaluated or appraised other studies done elsewhere?

A No, we studied our own system but not studies done elsewhere.

Q I am not sure we made it clear yesterday, Mr. Hofacker, when we talked about the cycleable nature of your loads that are actually delivered; we talked about the squiggly lines, but the fact is that there are times during the year when you know that you can expect your loads to be considerably up or considerably down?

A It's the pattern, yes, sir.

Q And your highest usage of energy is during the winter months,

1 is it not?

2 A It has been, sir. We have one area that it is in the summer;

3 that is the Billings area. But the system, as a whole, is

4 the winter months.

5 Q That makes it kind of handy, doesn't it, for servicing, for a-

6 example, irrigation; that would be coming during the spring

7 and summer months when your otherwise peak would be down?

8 A Yes, sir; as I stated the other day.

9 Q And that is how you kind of balance out loads so you don't

10 have tremendous peak at one time of the year which you would

11 never have to service again during the year?

12 A Yes, but there is a limit as to how far you can go in that area

13 too, because you have to have some time to take machines down

14 for maintenance. This load pattern is helpful in that area.

15 Q One of the functions performed by the Bonneville Grid, particu-

16 larly in the Pacific Southwest-Pacific Northwest intertie, is to

17 assist at handling the rather substantial peak in the California

18 area in the summertime when the Pacific Northwest would have

19 its peak like Montana's, more so in the wintertime; isn't

20 that true?

21 A Yes, sir.

22 Q So there are, indeed, times during the summer when your re-

23 sources are put to use, thanks to the Bonneville Grid, to as-

24 sist the folks in California pick up their summer peak?

25 A Upon occasion when we have surplus available.

26 Q Now, yesterday, -- well you certainly would have surplus dur-

27 ing the summer months, wouldn't you?

28 A Yes, the thermo generation; however, this is becoming less as

1 we combine our hydro with our thermo base for shaping and --
2 and saving the hydro in the high energy demand periods.
3 Q That is, you project the addition of thermal plants at
4 Colstrip 1 and 2?
5 A Yes.
6 Q But at the moment you only have the one continuously opera-
7 ting thermal plant and that's at Corette?
8 A Yes, sir.
9 Q We did discuss, yesterday, your discussion with Mr. Bellingham
10 last Thursday on the potential additions of the Continental
11 Oil Company and Ethyl Corporation,and we read the letters
12 into the record which was the basis of your discussion with
13 Mr. Bellingham on that subject. But, I'm not sure the record
14 is clear, Mr. Hofacker. Do you know when the Ethyl Corpor-
15 ation plans to build a plant in Montana?
16 A They talked in the next few years. Now, I would guess this
17 to be within the next five or six or seven years. I under-
18 stand they have inquired in several areas, not just Montana.
19 Q Do you know where in Montana the Ethyl Corporation is con-
20 templating building?
21 A I have no idea.
22 Q And, I take it from the confidential nature of the letter
23 which the Ethyl Corporation vice president wrote to Governor
24 Judge, because of competitive reasons, you don't know what
25 they plan to build either?
26 A No, some petrochemical type of a -- a chemical type of a
27 plant I would assume, but I would have no idea what.
28 Q Now, similarly with respect to the Continental Oil Company,

1 do you know when they plan to do any building?
2 A Yes, and I think that was outlined in their letter.
3 Q When do you think they're going to build?
4 A Well, there's a series of additions coming on over the next
5 several years, of, oh, under a megawatt sometimes, a megawatt
6 or two in others, and I think it all adds up to about six
7 megawatts increased by -- well, I'll look at the letter and
8 I'll have it right. Six megawatts by 1978.
9 Q When is the first additional megawatt hitch coming on to the
10 Continental Oil Company as they've projected in their letter
11 of November 21st, 1974, in response to Mr. Rice's urgent
12 request?
13 A Well, as they say, the approved but incomplete additions was
14 900 megawatts in 1974, so being that late in the year, I
15 presume they didn't get on until this year, but, that was
16 900 KW's, though. And then in 1975 another 870 KW's.
17 Q That's eight-tenths of one megawatt?
18 A Yes, sir, making a total of 1.8 for those that carry over from
19 1974, and then 1.6 in 1976,and 2.3 in 1977, and 1 megawatt in
20 1978.
21 Q Well, in order to get up to the total of 6.7 megawatts, you
22 have to add on nine-tenths of one megawatt that they projected
23 last year, don't you?
24 A But, as they say, it wasn't completed in 1974, so it didn't
25 come on, apparently.
26 Q Well, what their letter said was that they had approved
27 incomplete additions. Did that tell you that no part of
28 those nine-tenths of one megawatt came on in 1974?

1 A I don't know that it does. There's a statement over in
2 the second page that says a 900 kilowatt increase for the
3 1974 includes our requirements for 1974 projects not com-
4 pleted, so, some portion or all of that may be coming on
5 this year. I don't know.
6 Q You don't know?
7 A No, sir. It's rather minor, anyway.
8 Q Sure, because the total load is kind of minor in talking
9 about nine-tenths of one megawatt, isn't it?
10 A Yes, but when you add them all up that's what makes our
11 total system load. We've got a lot of loads like that.
12 Q And, you've told us what those potentials are?
13 A I mean I've totaled the one's we have -- there's a lot less
14 than a megawatt.
15 MR. SHENKER: The original of the Applicants'
16 Exhibit 118 has been received?
17 (Hearing Examiner hands Exhibit to Mr. Shenker.)
18 Q Now, in discussing the lead times with Mr. Bellingham out
19 of the West Group Forecast, as I understand the state of your
20 direct examination, you did not dispute the accuracy of the
21 construction time necessary in the milestones listed. Is
22 that correct?
23 A Right. Yes, sir.
24 Q And, indeed, I take it you don't dispute the total milestones
25 that are suggested in the West Group Forecast, except as
26 applied to the Montana Power Company?
27 A Yes, sir.
28 Q Now, let's take a look at that West Group Forecast. The

1 forecast itself was transmitted to the Chairman of the
2 Pacific Northwest Utilities Conference Committee on
3 January 15, 1975, by Glen Nogle of the Washington Water Power
4 Company, who was the Chairman of the sub-committee on loads
5 and resources of the same Pacific Northwest Utilities
6 Conference Committee?
7 A Yes, sir.
8 Q And, on the first page of that letter, Mr. Nogle states to
9 Mr. Elmore, the Chairman of the Conference Committee, that
10 the milestones' schedules were done in order to arrive at a
11 more realistic measure of the available resources. Is that
12 correct?
13 A Yes, sir.
14 Q You would agree with that, would you not?
15 A Yes, sir.
16 Q You would also agree that Mr. Nogle's comment in the same
17 letter, at the bottom paragraph of the first page, that the
18 new hydro projects that are included in the forecast are
19 considered to be assured?
20 A I had no part in this, and I have not looked, recently, at
21 those new hydro projects, but I presume he's speaking from
22 facts. I have no reason to dispute, that I know of at this
23 moment.
24 Q All right. How about the Noxon Rapids project? That's a
25 non-federal hydro project. Do you consider that one assured?
26 A Well, I know Washington Water Power is the one proposing it.
27 Q So they ought to know?
28 A I would assume they would. Yes, sir.

1 Q Mr. Nogle, of course, is from Washington Water Power Company.
2 A Yes, sir.
3 Q Now, if we turn to the second page of his letter, that lists
4 new thermal projects to include Colstrip 3 and 4 for seventy
5 percent.
6 A Yes, sir.
7 Q That means that seventy percent of Colstrip 3 and 4 will be
8 available to the West Group, does it not?
9 A Yes, sir.
10 Q And you see in the third paragraph on that second page,
11 Mr. Nogle's observation that the large new thermal resources
12 of 500 megawatts or larger reflect the maturity factor of
13 seventy-five percent plant factor after the first year of
14 commercial operation?
15 A Yes, sir.
16 Q Do you agree that that's a mature plant factor?
17 A It might well be. I had no part in the discussions that
18 arrived at that, but experience of the larger plants may
19 indicate that.
20 Q You note also, Mr. Hofacker, in the fifth paragraph on that
21 same page, Mr. Nogle's observation that combustion turbine
22 plants are included both for peaking and for firm energy?
23 A The fifth paragraph on that page -- included for energy where
24 it had to be, I presumed, to meet their loads.
25 Q Sure.
26 A But not because they wanted to.
27 Q Well, whether they wanted to or not, they did it, didn't they?
28 A Yes, sir, and as soon as they can stop doing it, they will

1 stop doing it, I'm assurative of that.
2 Q That would be true about any resource, wouldn't it?
3 A Not necessarily. No, sir.
4 Q Well, of course it would, Mr. Hofacker, wouldn't it, that if
5 you had a resource that you didn't want to continue, you
6 wouldn't continue it if it wasn't economical?
7 A Well, gas turbines are in a category by themselves in this
8 area. They are high cost and,particularly in this day of
9 petroleum fuel, you would not run them any more than you
10 absolutely have to.
11 Q But that's a current phenomenom based upon some of the
12 present conditions that obtain. Right?
13 A It's been in existence for some time. Yes, sir.
14 Q But gas turbines, of course, remain the cheapest capital
15 expenditure for construction of generating sources, and also
16 the quickest?
17 A Yes sir, but the highest energy source and the combined cost
18 for base load was higher than base load for thermal plants
19 of another nature.
20 Q And that's based upon current oil prices?
21 A No, sir, that's been proved, based upon the old oil prices.
22 Q Gas turbines remain, of course, used by practically all of
23 the utility companies as peaking resources, don't they?
24 A They do, and from reading further in those reports, you will
25 see company after company that bemoans the fact that they had
26 to put so many on and run them for so many more hours than
27 they had originally planned.
28 Q Of course you won't find that in the West Group Forecast

1 at all, will you?

2 A I'm not sure that you do. I don't recall that statement,

3 but I believe you've heard remarks about Portland's.

4 Q Yes, Mr. O'Connor told us about the veil of tears.

5 A Yes, sir.

6 Q All right. Now, we've had some discussion about critical

7 period hydro resources. The definition of critical period

8 appears in the West Group Forecast immediately after Mr.

9 Nogle's letter of January 15, 1975. You would accept the

10 definition of the critical period for hydro, would you not?

11 A Yes, sir.

12 Q And, that is based upon the 1936-1937 stream flow conditions,

13 which represented the most severe conditions that would

14 occur in a single season. Is that right?

15 A The most -- yes, sir, it says that, but it is the most

16 severe historical season we've had.

17 Q Yes, 1936-1937.

18 A Yes, sir.

19 Q All right. Now if we look at the West Group itself, Mr.

20 Hofacker, with peak loads and resources, assuming adverse

21 hydro, on the next page of the West Group Forecast after the

22 definitions, that shows us, does it not, that for every year

23 until 1981-1982, and for every year after 1981-1982, there

24 is a surplus of resources overload?

25 A Yes, sir, and this includes, of course, the Colstrip units.

26 Q All right. Now, that would be true, would it not, Mr.

27 Hofacker, therefore, for all of the West Group participants

28 taken as a whole?

1 A All of the West Group. Yes, sir. Could we read what the
2 peak loads and peak resources are, as defined?
3 Q In the definition section?
4 A What I was alluding to -- wondering if the loads included,
5 or if they were just loads, or loads plus reserves.
6 Q It's loads inclusive of reserves. That's what I wanted to
7 point out to you, sir. If you'll turn to section 3 of the
8 West Group Forecast -- unfortunately the Forecast is not
9 consecutively paginated so you have to pick it out -- it is
10 entitled "Resources and Requirements Summary Tabulations."
11 A Yes, sir, I think I'm in the section now and getting up to
12 the forepart of it. Yes, sir.
13 Q All right. On the first page, under section 3, when you look
14 at the summary of resources and requirements without reserves,
15 there, of course, you see under peak, extremely large sur-
16 pluses gaining all the time, year after year, from 1975
17 through 1985, if you ignore reserves?
18 A I wouldn't say they were extremely large surpluses when you
19 think of reserves as not having been taken out. They're just
20 over ten percent of the -- I believe of the --
21 Q That's true of 1975, but in 1980 it's twenty percent -- it's
22 over twenty percent, isn't it?
23 A Yes, as I alluded to before, that for planning purposes, this
24 was a program that had been adopted for the entire Northwest
25 of getting up to twenty percent, that would include not only
26 the forced outage, but the growth rate.
27 Q Then in 1985-1986, the surpluses without reserves would be
28 over thirty-five percent, wouldn't it?

1 A 1985-1986?

2 Q Yes.

3 A Now, are you taking percentage of load or percentage of

4 resources?

5 Q We have a surplus of 9,766, is that right?

6 A Yes, sir.

7 Q You want to take it of the --

8 A No, I'm saying what were you taking it of, sir?

9 Q Well, I was looking at the estimated total peak load. Isn't

10 that the way you compute your percentages and surpluses?

11 A Yes, sir.

12 Q All right. Excuse me. That's twenty-six percent, is it not?

13 A I could take my slide rule out, but I think it's close --

14 it's awful close -- it's under thirty.

15 Q It's over twenty-five percent in 1985-1986?

16 A Yes, sir.

17 Q Now, if you look, Mr. Hofacker --

18 A Before we look beyond that, sir, may I interrupt? You can

19 pick particular years when it may be that high, but then you

20 go back -- you go on again, and you'll probably settle back

21 to twenty percent, because as you put in a resource, you

22 can't input just a piece of a resource, you put it all in,

23 whatever that unit is. So, OK, you'll have, perhaps, in

24 excess of the twenty percent at that time, but if you hadn't

25 put it in, you would have been considerably deficient of that

26 twenty percent that you were shooting for.

27 Q What you're telling us is, that as you go over a cycle of

28 perhaps five years, at the beginning of the cycle you would

1 expect to have surpluses and it kind of peters out a little
2 bit toward the end of that cycle, and then as more resources
3 come on, you'll have surpluses and that'll peter out --
4 A We laid it exactly to how your loads are going and your
5 resources as you come on. As I say, you put the resources
6 on in blocks.
7 Q Well, wouldn't it make sense, Mr. Hofacker, to have new
8 resources coming on practically every year so that you
9 wouldn't have the surpluses accumulating and then petering
10 out?
11 A Ideal, if practical or possible. I believe you looked at
12 the hydro thermal program and it appears that, at one point
13 in time, there was about a thousand megawatts needed each
14 year, and that was sort of the initial program that was
15 embarked upon. It had a thousand megawatts of some sort,
16 or better, coming on each year. It would be ideal to bring
17 it on just at the instant you need it, but you can't do it
18 in real life.
19 Q What you need is, rather, sophisticated, complete, jurisdic-
20 tionally binding, regional planning, in order to have that
21 done on a broad scale?
22 A Plus the same quality of control of what the customers are
23 going to be doing, sir.
24 Q That's right. In system after system, it must be coordinated
25 on the control of what the customers are going to want.
26 A And I'm not going to be able to tell you what you want. Yes,
27 sir, I can't tell you what you want.
28 Q But, in order for one system to work best with the other,

1 we certainly ought to be doing the best job we can of telling
2 the same things about what you and your wife and I and my
3 wife want to do next year and the next year?
4 A And this is what we're striving for.
5 Q Which you haven't reached yet.
6 A We've made progress.
7 Q But which you haven't reached yet?
8 A We'll never reach where we'd like to be.
9 Q All right. Let's turn to the next page in the West Group
10 Forecast after the bar graph with the peak loads. That would
11 be a bar graph with energy loads.
12 A Now, you're moving back again?
13 Q Yes, to where we had left off before you had asked me the
14 question about whether reserves were included in the bar graph.
15 A It's right up close to the front someplace, I think. Could
16 you give me just one moment to look at something here?
17 Q Sure.
18 HEARING EXAMINER: Let's take ten minutes.
19 (RECESS 10:15 A.M.)
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21
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(Following a brief recess, the hearing reconvened at 10:40 A.M. On June 3, 1975)

HEARINGS EXAMINER: I don't want to rush you gentlemen, but if you are ready, we will proceed Mr. Shenker.

MR. SHENKER: Thank you, Mr. Davis.

Continuation of Cross-examination of Mr. Hofacker by Department of Natural Resources and Conservation

By Mr. Shenker

Q On your direct examination by Mr. Bellingham, I believe you informed him that you anticipated no changes in your load forecasting philosophy, except for some additional sophistication in computer treatment of the variables that you would look at. Is that right?

A I don't think I said it quite that way. I said no -- I don't believe it is correct exactly, as I interpret what I said.

Q How would you -- ?

A I would say no major change in the basic philosophy --

Q Of load forecast?

A Of load forecast, yes.

Q Aside from some additional sophistication in computer treatment of variance. That's not philosophy change, is it?

A No. No, it's a matter of manipulating the data that you have available.

Q And the kind of data that you'd want to look at with computers, would that include economic data?

1 A It could very well.

2 Q It is true now, is it not Mr. Hofacker, that you do not use

3 economic data for the computer analysis in your load fore-

4 casting?

5 A We do not.

6 Q Now, the new variables that you might want to look at in

7 forecasting would include alternatives for generation, is

8 that right?

9 A We have looked at those in the past, alternatives for

10 generation.

11 Q You have looked at those in a subjective way but you have not

12 done a computer analysis of data for alternatives, have you?

13 A I am not sure I know what data you are talking about that you

14 could put on the computer.

15 Q I think that answers the question that you haven't put any on

16 the computer, doesn't it?

17 A Well -- yes, sir. I think your statement infers that there

18 must be a lot of data that you can put on a computer and I'm

19 curious as to what this is.

20 Q Have you read the reports of the National Economic Research

21 Associates on how they would computerize data for a load fore-

22 casting?

23 A I have read that and I -- yes, I have read that.

24 Q Other new variables that you would include for load fore-

25 casting would be pricing fluctuations in all energy sources,

26 right?

27 A As I say, we have included our judgments of pricing in our

28 forecasts heretofore, but we may very well put that in a computer

1 type of program.

2 Q And you would do so because it would give you more accurate

3 or reliable information, I take it?

4 A Maybe not more accurate or reliable, but a chance to look at

5 a lot more -- a lot larger matrix in a period of time of

6 variables.

7 Q You don't now use pricing fluctuations for all energy sources

8 in any economic or quantified way that you would need, in order

9 to do a computer analysis, isn't that true?

10 A We use this data now, not with a computer, in assessing how

11 we should take care of our resource requirements.

12 Q Yes, you use them subjectively, but you don't have a quantified

13 means of doing so, do you?

14 A Not as such, but I don't think there's any grand and glorious

15 solution by using a quantified number either. Again, it's a

16 tool, one of the many, that is used in arriving at a judg-

17 ment as to what the estimate ought to be.

18 Q Sure we could all take a look at the meter connections that

19 we see with our eyeballs in the various communities and have

20 that help us make a determination of what we think the number

21 of meter connections is, but you find that the tool of using

22 meter connections as a guide, to be sharper for your analysis,

23 when you actually have the written compilation of those

24 numbers, isn't that true?

25 A Yes, it's true, but what I'm referring to is that the manner --

26 the manner which you use data available to you and the judg-

27 ments made, as to the specific values you put on those when

28 you put them in your computer program and their judgment is

1 necessary again. There is no set formula.

2 Q Yes indeed. You have to make a determination of what will go

3 into the computer?

4 A And a determination of your best judgment of the values of

5 those items.

6 Q All right, and of course, it is possible to program a computer

7 in order to give appropriate weight to the data that comes

8 out of it, isn't it?

9 A I would say you can program it so you can give weight to it.

10 Now how appropriate depends again, on the capability of the

11 people weighing it.

12 Q Your judgment, isn't that right?

13 A Yes, sir.

14 Q And the same would be true with respect to conservation

15 effects. You could quantify conservation effects if you had

16 data available to you which in your judgment was useful for

17 quantification?

18 A Given the right data, certainly you can.

19 Q And the same thing would be true with respect to population

20 and population growth, would it not?

21 A It will be historical again, as it is what population growth

22 has been and a judgment of what it is going to be in the

23 future and you plug those numbers into the computer and see

24 what it does to you.

25 Q And you could therefore, quantify the effect of such population

26 growth in a computer analysis if you were satisfied with the

27 data that you were plugging in?

28 A Yes, sir.

1 Q I believe you told us also, in your direct examination, Mr.
2 Hofacker, that you were familiar with the approaches that
3 other utility companies used in a trend extrapolation
4 approach?
5 A On a general basis, yes, sir.
6 Q It is true, is it not, Mr. Hofacker, if you look at the
7 last 20 years, as a whole, that that represents the largest
8 growth of utility industry in the historic record?
9 A Yes, sir.
10 Q It is also true, is it not, with respect to utility industry
11 as a whole, that the way for it to increase profits, is to
12 increase the capital investment base on which it is entitled
13 to a return, as determined by the public utilities commissions
14 and public service commissions in the various states?
15 A Yes, sir, as in any business.
16 Q Well, there are some businesses, of course, that are not
17 regulated by -- .
18 A That's right. And they are free to do as they wish.
19 Q That's right -- .
20 A Depending on what the market does to them.
21 Q Yes. Some businesses do not have, as their index for profit-
22 ability, the return on capital investment alone.
23 A That's right. May I inject a comment again, sir.
24 Q Actually Mr. Hofacker, I think we might go a little faster
25 if you save your injections for when Mr. Bellingham has re-
26 direct-examination.
27 A All right. I had it on a previous question you asked me that
28 came to mind.

1 Q Yes, you want to clarify -- ?

2 A That was on the greatest growth in our history and I think in
3 magnitude, actual megawatts going on line is the largest, but
4 I am not sure the percent of growth is the largest. I am not
5 sure of this. I would have to look -- because I believe in
6 the early '50s there were studies made, based on what history
7 had been that this growth rate that has occurred, would occur.
8 It was predicted in the early '50s and they had to have a
9 historical record of some sort, I believe.

10 Q That was the post-war boom in which the prediction was made?

11 A No, sir. It was based on the history of what the electrical
12 industry had been many years previous to that period of time.

13 Q And the projections in 1950, based upon where we were then,
14 is what it was for?

15 A Right.

16 Q Your philosophy, as I understand it Mr. Hofacker, is that it
17 is better to over-estimate than under-estimate load, although
18 it's better to hit it right on the nose?

19 A Yes, sir, within reason.

20 Q And one of the reasons for that is that if you over-estimate
21 your load you can always defer and delay the load coming on
22 to stream -- the resource coming on to stream, I should say.

23 A This is possible.

24 Q And that in fact, is the reason that was assigned when you
25 informed Bechtel Corporation in September of 1974 that there
26 would be a delay in the Colstrip units coming on to stream,
27 isn't it?

28 A I think the reason was -- it was going to be impossible to get

1 it on line in '78 because we would not have any permits to
2 construct.
3 Q Let's back up. We know, do we not, that between your February
4 and November 1974 load forecasts, you reduced your load in the
5 Montana Power Company?
6 A Yes, sir.
7 Q And you know, do you not, that prior to November of 1974,
8 you also knew that the other four Applicants had reduced their
9 load forecasts?
10 A Yes, sir, but can we go back to that exhibit that shows it
11 didn't wipe out; it still was close to 500 megawatts of
12 deficiency in energy even with that reduction.
13 Q Are you through?
14 A Yes, sir and thank you.
15 Q Now, knowing that there were reductions in the load forecasts
16 by November of 1974, did you not tell the Bechtel Corporation
17 that a reason for delaying and deferring the Colstrip Units
18 3 and 4 was the reduction in the load forecasts?
19 A If we did, I don't recall that. There was still, as I say,
20 this 500 and some megawatts of energy deficiency that would
21 certainly have been readily handled with #3 if it could have
22 been brought on line.
23 MR. SHENKER: I will have to reserve cross-examination
24 of Mr. Hofacker, for the Bechtel depositions of May 15th.
25 HEARINGS EXAMINER: Very well, you will have that
26 right.
27 Q Turning to Exhibit #11, which was offered to your -- in your --
28 direct examination, just before the end of the morning last

1 Thursday, on the second day of your direct examination.
2 As I understand it, in your classification of residential
3 load, you include a rural load, as well.
4 A Yes, sir, exclusive of pumping, I believe is the correct -- .
5 Q You would inlcude, therefore, farms operated commercially
6 without their pumping and irrigation?
7 A Yes, sir.
8 Q Had you computed for us, Mr. Hofacker, what the percentage
9 growth is on the residential load? I think Exhibit 11 A
10 was going to try and do that for us?
11 A Yes, I think residential was 5.1% per year.
12 Q Now, the Anaconda Company load over that same period of 1964
13 to 1974 was what - something less than 0% growth?
14 A Yes, sir.
15 Q And your system losses, over that same period of time, ran
16 what? about 5%?
17 A Yes, in that general area, sir.
18 Q So that your total energy load, if you look at the last
19 segment of Exhibit 11 A, on the top, would be something less
20 than 4%?
21 A You mean the system losses represented in that total, is that
22 what you're saying?
23 Q No, the total load growth?
24 A Oh, the load growth. '64 to '74 the total -- yes, yes -- .
25 Q Something less than 4%?
26 A Yes, sir.
27 Q You have the DNR Exhibit #5 there, Mr. Hofacker, in your notes
28 or is that something that's -- ?

1 A DNR Exhibit #5.
2 Q Marked from your notes during your direct examination?
3 A Oh, that's right. Just a minute. I wanted to say something
4 about that this morning.
5 Q Referred to the average number of customers?
6 A If you look at the average number of residential customers
7 in 1973-1974, you show 5,000 approximate additional customers
8 in that year.
9 A Yes, sir.
10 Q What percentage growth is that?
11 A 3%.
12 Q 3%?
13 A Yes, sir.
14 Q If you look at the number of customers in your commercial
15 sector from 1973 to 1974, that's an additional 700 customers,
16 is it not? What percentage growth is that?
17 A A little in excess of 3%.
18 Q If you look at the industrial, including one railroad, that's
19 200 customers, that would be what percentage growth?
20 A About 8%.
21 Q Government and municipal customers increases by some 40 --
22 no by 32 customers. What growth is that?
23 A Something less than 4%, 3 plus.
24 Q And theinter-departmental. What's that? Inside the Montana
25 Power Company?
26 A I believe there's -- there may be another item but essentially
27 that, yes, sir.
28 Q That's practically no growth between '73 and '74?

1 A That's right.

2 Q So if you take the sub-total ultimate to get the figure for

3 other utilities, there is practically no change.

4 A That's right.

5 Q So the total for all customers changes by a little bit less

6 than 6,000 between 1973 and 1974. What percentage is that?

7 A Again a little in excess of 3% probably.

8 Q Now if you take your electricity sales in megawatt hours,

9 your residential sales for 1973 to 1974, off a base of a little

10 over a million megawatt hours, increased by some 27,000 mega-

11 watt hours, is that right?

12 A Yes, sir.

13 Q What percentage of change is that?

14 A Close to 2.7% -- 2 1/2, 2.6, something like that.

15 Q And your commercial sales increased by 14,000 megawatt hours

16 off of a base of 916,000. What's that percentage of change?

17 A That's about 15%.

18 Q 15%?

19 A Wait a minute - 1 1/2%.

20 Q 1 1/2%?

21 A Yes, sir.

22 Q Your industrial change off of a base of 2,167,000 odd, is

23 some 26,000 megawatt hours. What percentage of change is that?

24 A Oh, about 1.3.

25 Q Your government and municipal went down?

26 A Yes, sir.

27 Q By what? About 2%?

28 A Yes, in that area.

1 Q And the inter-departmental went up about 900 megawatt hours
2 off of a base of about 12,000?
3 A Yes, sir.
4 Q That would be an increase of a little over 1%?
5 A Increase -- It's about 7%, isn't it?
6 Q About 7% inter-departmental?
7 A I believe about 7 to 8%.
8 Q Why did your inter-departmental sales go up so much higher
9 than all the other sales that year? Inside the Montana Power
10 Company?
11 A I don't really know.
12 Q The number of communities and environs that you serviced in
13 1973 and 1974, were the same, were they not?
14 A Yes, sir.
15 Q Now, let's turn to Exhibit #12, Mr. Hofacker.
16 A Would you excuse me for a moment? This is the one that was
17 marked DNR 3 that was in my file and I don't presume that I
18 should have other than a copy of this in my file.
19 Q You're right. You might keep that out.
20 MR. BELLINGHAM: May we arrange to have copies
21 made of these?
22 HEARINGS EXAMINER: Do you have copies of those?
23 MR. SHENKER: They haven't been offered yet, though.
24 MR. BELLINGHAM: One of the attorneys said they were
25 going to make copies of them.
26 MR. SHENKER: The ones that have been offered have
27 been copied, I understand.
28 MR. BELLINGHAM: We should have copies of all of them.

1 HEARINGS EXAMINER: We will arrange for copies of
2 anything you don't have that are in evidence or offered
3 if you need them for reference purposes.
4 Q As I understand it, Exhibit #12, was prepared some 2 years
5 after the application. Is that right?
6 A This particular one, yes, sir. However, we had some other
7 studies of this general nature prior to this.
8 Q On the last actual written study that you had, prior to the
9 preparation of Exhibit #12 in connection with this proceeding,
10 was one with a memorandum of August 28, 1973, from Mr. Daven-
11 port, that Mr. Labrie was asked to prepare for you, isn't
12 that right?
13 A I believe that's true.
14 Q The August 28, 1973 memorandum, Mr. Hofacker, to refresh your
15 recollection on that, was a memorandum that was prepared in
16 order to confront some documents that were contained in a
17 Federal Power Commission survey, isn't that true?
18 A Yes, sir.
19 Q When did you discover the Federal Power Commission survey
20 and the information in it?
21 A When it first came out.
22 Q When was that?
23 A In 1970.
24 Q Were those not studies made by the Federal Power Commission
25 which concluded that it was cheaper to go by rail than by
26 wire?
27 A They did, but the basis upon which they concluded that was
28 starting from scratch. You build a plant and then you are

1 moving the energy rather than integration into an existing
2 system.
3 Q Therefore, taking the conclusions of the Federal Power Commission
4 in its study in 1970, that it was cheaper to go by rail than
5 by wire, on August 28, 1973, you had a memorandum prepared
6 that disagreed with those conclusions?
7 A That's right. Yes, sir. One that reflected the situation in
8 the area we were operating in.
9 Q And then your next look at that question is what we have
10 before us as Applicant's Exhibit #12?
11 A We had some other minor refinements. Yes, sir, that's true.
12 Q Can you tell us in over-view, Mr. Hofacker, what are you
13 trying to compare in Applicant's Exhibit #12?
14 A Moving energy from the Colstrip site to the Hot Springs
15 locality, comparing the cost, moving that energy in the form
16 of coal via railroad train or in the form of electricity by
17 power lines.
18 Q Is it not a fair statement that what you were actually comparing
19 is the information that you have now with respect to the costs
20 of building the Colstrip units and transmitting the power
21 generated by the Colstrip units by two 500 kv single circuit
22 lines to Hot Springs; that on the one hand, with the shipment
23 of an equivalent amount of coal as used for the Colstrip 3 and 4
24 generating units by rail cars to the Hot Springs area and there
25 constructing another plant?
26 A We have no plans for constructing another plant, sir. The
27 reason we took Hot Springs, was that was the eastern terminus of
28 the western grid -- transmission grid.

1 Q Doesn't Exhibit 12 assume that there is going to be a power
2 plant built in Hot Springs?
3 A It does not.
4 Q You say that Exhibit 12 does not compare costs of transmitting
5 coal by rail, which includes the generation of energy out of
6 that coal once it is transmitted by rail?
7 A No, sir. It's moving that energy from Colstrip to Hot Springs.
8 Q You're not moving any energy if you're just moving coal. You
9 have to do something with the coal in order to make it energy
10 don't you?
11 A That's right.
12 Q Aren't you building into your assumptions, with respect to
13 Exhibit 12 that, you have in fact, made the coal into energy?
14 A No, sir, we have not. It's there in the form of coal but the
15 energy is there, in the coal.
16 Q The energy is in the coal?
17 A It certainly is.
18 Q But your study, as I take it, does not compare the actual
19 conversion of that coal to energy?
20 A No, sir.
21 Q Whereas at the Colstrip site, of course, you are comparing
22 the conversion of that coal to energy?
23 A No, sir. We are taking the energy as it has been converted
24 -- after it has been converted -- at Colstrip and moving it
25 by wire.
26 Q And then you are comparing the converted energy from coal at
27 Colstrip, with the non-converted energy from coal at Hot Springs,
28 is that right?

1 A The -- that's right, but the energy is there to use.
2 Q But that is your comparison for our purposes in Exhibit #12?
3 A Exactly -- the same foremat as the Department of Natural
4 Resources used to compare the movement of energy and it's
5 movement of energy that we are comparing.
6 Q But on the one hand, we are dealing with the movement of
7 energy that has already been converted into transmittable
8 power and on the other hand we are looking at the movement
9 of energy by coal, which is yet to be converted into trans-
10 mittable power.
11 A Yes, sir and these are incremental comparisons. Now, if you
12 want to install a plant that -- you put in the cost of that
13 plant and the cost of the plant at Colstrip and they wipe out
14 when you compare.
15 Q You mean in Exhibit #12 you have not included the cost of the
16 plant at Colstrip?
17 A We have not.
18 Q Oh. What do you have in Exhibit #12, that takes a look at
19 the converted energy from Colstrip to Hot Springs?
20 A We have the transmission system to move it there and the value
21 on the electrical losses that occurred.
22 Q So then you are assuming, with respect to Exhibit 12, that
23 some power plant, of an unknown cost, is generating energy
24 from a known amount of coal at an unknown operating expense
25 and then transmitting the energy over transmission lines of a
26 known cost? Is that right?
27 A The costs of this conversion are known, but what I'm saying is
28 that the conversion would be the same at either end so when

1 you compare the difference, it wipes out, it washes out.
2 Q So the only thing you're really comparing then in Exhibit 12
3 is the cost of the transmission system from Colstrip to Hot
4 Springs with the cost of a rail shipment from Colstrip to
5 Hot Springs?
6 A Yes, sir.
7 Q And I take it to be your testimony that based on the work
8 that was done as described in Exhibit #12, that just looking
9 at the cost of the transmission system from Colstrip to
10 Hot Springs, you have concluded that it's cheaper to trans-
11 mit energy over those wires than it is to transmit coal by
12 rail?
13 A Yes, sir.
14 Q That determination, of course, has to take into consideration
15 the actual cost of the transmission line?
16 A Yes, sir.
17 Q That would include, would it not, the purchase for the right-
18 of-way for the line?
19 A Yes, sir.
20 Q Where is that in Exhibit 12?
21 A It's in the cost of the line-- it's computed in the cost
22 of the line. In other words all the different costs were
23 added up and that's how we arrived at the gross cost that's in
24 the line.
25 Q Can you show that to me?
26 A It's not in the back-up. Here in the total cost per mile on
27 page 4 is a -- of the 500 kv, is 199,216 dollars per mile.
28 Q And that includes the condemnation of right-of-way?

1 A It does.

2 Q Mr. Hofacker, you are aware, are you not, of the various

3 studies done by the C. T. Main Company, as to what the cost of

4 the transmission line would be without condemnation of right-

5 of-way?

6 A That was a factor that was in here too, and then we put in our

7 own estimates based on our right-of-way department's estimate

8 of purchase of right-of-way for that line, and C.T. Main's

9 figures were adjusted by our knowledge of what we expect our

10 experience would be.

11 Q What did you use by way of C. T. Main estimate for the cost of

12 the transmission line without the right-of-way?

13 A I'll look at my back-up here -- maybe I have it somewhere.

14 Right-of-way -- the basic number of the '75-'76 construction

15 cost and then that had to be escalated to get into the time

16 frame of when installation would actually be made, including

17 right-of-way acquisition, engineering, survey, construction

18 management, miscellaneous, including filing fees, interest

19 during construction, conductors, hours and so forth was

20 152,200 dollars, and that was based on the bids and the numbers

21 we knew from the double circuit 230 kv line, which was a

22 slightly more expensive line because it's -- it had to be some-

23 what larger to take care of two circuits emission.

24 Q Do you use the 152,200 dollars per mile, based upon a 1975-

25 1976 scale up from another line?

26 A Yes, from the Anaconda -- or the Broadview -- Colstrip-Broad-

27 view 230 kv steel tower double circuit line.

28 Q You are aware, are you not, Mr. Hofacker, of the estimates of

1 the C. T. Main Company, that range anywhere from 152,200 to
2 195,00 per mile.
3 A Yes, sir. This was a transmission study determining what
4 conductor size would be the economic size for conductors.
5 Q Did you not know, Mr. Hofacker, that in February of 1975 in
6 Charlotte, North Carolina, at a meeting over which John Evans
7 presided, because he is in charge of the transmission line
8 aspect of this project, that he instructed the representatives
9 of the C. T. Main Company, not to use figures in excess of
10 152,000 dollars per mile for transmission?
11 A If I was aware, I have forgotten this. I don't recall.
12 Q And did you not know, at that time, in February of 1975, that
13 the conductor size and configuration of the transmission lines
14 had already been decided?
15 A I knew that they had been decided, yes, sir.
16 Q And did you know at that time, February of 1975, that based
17 upon the decided conductor size and configuration, that the
18 C. T. Main Company had estimates as high as 190,000 dollars
19 per mile, instead of 150,000 dollars per mile?
20 A I am not fully aware of this, no, sir.
21 Q You would agree with me sir, would you not, that if there were
22 a difference of between 150,000 and 190,000 dollars per mile
23 that that would increase the cost per mile of your transmission
24 line by 30%?
25 A Yes, with those numbers, your arithmetic is correct.
26 Q So if we were to look at Exhibit #12 on page 4, where you add
27 your cost per mile on a 1979-80 completion, if we were to
28 escalate by 30%, we would be adding some 40 odd million

1 dollars, would we not?
2 A Yes, sir.
3 Q The next item on page 4, is something called "Transmission
4 required if 500 kv not built"?
5 A Yes, sir.
6 Q And that's 44 million dollars altogether when you are through
7 with your computations?
8 A Yes, sir.
9 Q What do you do with that 44 million dollars? Did you add it
10 into the cost of the rail shipment or do you add it into the
11 cost of the transmission line or neither?
12 A It's added into the cost of the rail shipment, because in lieu
13 of the 500 kv transmission, this would have to be built, so
14 it is a cost resulting from shipping by rail freight.
15 Q Why would that have to be built?
16 A Because our system will require that for movement of power.
17 It's capability that the 500 kv would be providing if it was in
18 existence.
19 Q Mr. Hofacker, have you any written plans, any place in the
20 Montana Power Company, aside from Colstrip 3 and 4 and the
21 two 500 kv single circuit lines in connection with Colstrip
22 3 and 4, which propose the building of a 230 kv double circuit
23 line and terminal from Colstrip to Broadview?
24 A It is now under construction.
25 Q Yes, but that's in connection with Colstrip 1 and 2, isn't it?
26 A Yes, sir, and if you would have looked at those two compil-
27 ations, sir, at the top of that page, you will notice it's also
28 been included in the 500 kv, so again it's a wash out. You

1 could leave it out and it wouldn't change and if you left
2 it out of both of them, it wouldn't change in any way, the
3 outcome.
4 Q O.K. Let's move on to the Billings-Anaconda 230 kv line.
5 Do you now have any written plans for the construction of such
6 a line, aside from the Colstrip units?
7 A Not -- aside from Colstrip 3 and 4, yes. We have them for
8 1 and 2 and have had plans from the beginning.
9 Q You mean application for such a line?
10 A No, sir. We have applied for 3 and 4 but we have said in our
11 10 year plan what would be built if the 500 does not take
12 place.
13 Q How about the Anaconda to Hot Springs 230 kv. Do you have
14 any written plans for the construction of such a line aside
15 from Colstrip?
16 A When we are looking at 1 and 2 it was also -- it was also in
17 the calculations and the study for Units 1 and 2.
18 Q But you have made no application for that, have you?
19 A We have not. I have the feeling, if we could make the
20 application without the filing fee, we might very well have
21 made it.
22 Q Of course you couldn't do that because you know that in order
23 to apply for any of those transmission lines that you describe
24 on page 4, they're facilities and therefore you have to pay
25 filing fees, right?
26 A Yes, sir.
27 Q Actually, Mr. Hofacker, what you state in your 10 year plan,
28 which you filed with the Department on April 1, 1974, was

1 that if you did not build the two 700 megawatt plants, then
2 you would not need the two 500 kv transmission lines, and
3 instead, in addition to the 230 kv double circuit transmission
4 line from Colstrip to Broadview, which you need to transmit
5 power from Units 1 and 2 at Colstrip, you would contemplate
6 building a second Billings to Great Falls 230 kv line, and
7 a second Billings to Anaconda 230 kv line. Is that right?
8 A Yes, sir. But we have not -- yes, sir.
9 Q Where is the Billings to Great Falls line in this compilation?
10 A We didn't anticipate that that should be charged against the
11 coal transmission -- the transmission of the coal.
12 Q Why not?
13 A I think it would be unfair to it.
14 Q Why?
15 A The same as if we added all of our system additions for the
16 next 5 or 6 or 7 or 10 years to the hauling of freight. It
17 just wasn't logical to charge it to it and we were trying to
18 be as conservative as possible.
19 Q You didn't tell the Department in April of 1974 that you were
20 planning to build an Anaconda to Hot Springs line, if you
21 didn't have Colstrip 3 and 4, did you?
22 A Did we? I thought we did - is that -- are you looking at the
23 WSCC or at the 10 year plan for the state of Montana?
24 Q I was looking at your long-range plan of April 1, 1974, which
25 I thought you meant as your 10 year plan which you had given
26 to the Department.
27 A But we also have a 1975 10 year plan.
28 Q Oh yes. That 10 year plan was filed during the pendency of

1 this contested case proceeding about 6 weeks ago, wasn't it?
2 A But it was compiled during the winter months in preparation
3 for that.
4 Q And the 10 year plan of 1975 -- long-range plan -- that
5 includes with it, copies of some of the exhibits that are in
6 evidence in this proceeding?
7 A It probably -- it does, yes, sir.
8 Q And the 1975 long-range plan, that you submitted during the
9 pendency of this proceeding two weeks ago, states that when
10 you believe that additional transmission lines are needed,
11 as a result of your monitoring, then you will make some more
12 detailed studies of your transmission lines, right?
13 A Yes, sir. I believe you will find a compilation in three
14 different categories of transmission lines put in there,
15 farther into the report. May I go get my copy of that report,
16 sir? It's over in my briefcase.
17 Q I am not sure we will need it but we have copies.
18 MR. BELLINGHAM: Give copies to the witness.
19 Q As long as you have yours handy, take a look at Exhibit D of
20 your 1975 long-range plan?
21 A I was looking right at the moment -- excuse me but I'll look
22 through that. Yes, sir.
23 Q That's potential transmission projects for system improvement?
24 A Yes, sir.
25 Q Now, on that particular compilation you wouldn't expect to
26 find anything about Anaconda to Hot Springs, would you?
27 A I don't find it on there.
28 Q Then look at Exhibit C which is your transmission exhibit to

1 your 1975 long-range plan, tell me where on that Exhibit C
2 you find a description of the Anaconda to Hot Springs line?
3 A I don't find one described as such.
4 Q Then look at Exhibit E which is the transmission projects for
5 potential large electric load. Tell me if you find an
6 Anaconda to Hot Springs line there?
7 A They talk about some areas here, but I don't see the -- .
8 Q All right, Mr. Hofacker, to assume for purposes of computation
9 with respect to Exhibit #12, that the cost of 500 kv transmission
10 would be 42 million dollars greater than your computation on
11 page 4, and that the cost of hauling by rail would be 44 million
12 dollars less than you had used in your computations. How would
13 that affect your conclusions?
14 A It might make it a wash out, if that's a logical assumption
15 that you have made, sir.
16 Q Well, how would we do the mathematics, Mr. Hofacker, if we were
17 dealing with the transmission line cost that was 42 million
18 dollars less than you used and a coal haul cost that was 44
19 million dollars less than you used?
20 A How would I do the computations?
21 Q Yes, I think I misquote myself. 42 million more on the
22 transmission line and 44 million dollars less on the coal haul.
23 How would we do the mathematics in order to find out how we
24 would come out on that?
25 A You would take the fixed cost and operating costs of the
26 500 and compare it to just rail freight, exclusive of any
27 transmission, but I certainly would argue that it's not a
28 logical assumption that you have made, sir.

1 Q I know what your position is on it, Mr. Hofacker.
2 A Part of my logic is based on the fact that this 152,000 dollars
3 was based on the line we now have -- did hold on cost, rather
4 than somebody's conjecture to what happens in 1978 or '79.
5 Q And the somebody is the fellow that is going to build the
6 line for you, isn't that relevant?
7 A Yes, sir. He's not building the line. He's in charge of the
8 construction of it. Yes, sir, he has the contract for building
9 it.
10 Q They're the folks you are going to have to pay for building it?
11 A Yes, sir and we have already found a reduction of something
12 like, I believe, 20% in the costs of our Broadview sub over
13 there, estimate.
14 Q So your conclusion is that if you use this -- which you
15 describe illogical assumption, taking 42 million dollars and
16 adding that to the cost of the transmission and taking the
17 44 million dollars and subtracting that from the cost of coal
18 haul, that you would come out to about a wash out in terms of
19 rail freight haul?
20 A That's not a conclusion on my part. I said it could, and the
21 numbers you'd have to run through to see what it would be.
22 Maybe it goes over in favor of coal, I don't know.
23 Q Coal by rail, you mean?
24 A Yes, sir. But there are a lot of other things we could
25 manipulate the same way, sir, such as the escalation of the
26 price of coal. It makes a tremendous difference in that one
27 and we've been awfully conservative there.
28 Q That's true for a number of your assumptions isn't it, if you

1 change some of the variables on your projections of cost of
2 freight or your costs in transmission or your costs in con-
3 demnation, it's going to seriously affect the conclusions
4 you have arrived at?
5 A Yes, sir, but some are much more sensitive -- the results are
6 much more sensitive to some variables and I think the coal
7 freight escalation is sensitive as any variable we've got in
8 here.
9 Q Now, one of the points, I believe that you discussed on your
10 direct examination at the end of the day, last Thursday, was
11 the economic impact in Montana of having some coal hauled by
12 rail instead of transmitted by wire. As I recall, the factor
13 of something like 3 to 1 in terms of jobs that are actually
14 generated by rail haul of coal versus the transmission by
15 wire, is that right?
16 A I don't think it's 3 to 1 sir, no.
17 Q What did you think it was?
18 A I think it was -- I'd reverse the way you state it to me.
19 You are talking about 3 to 1 in favor of railroad jobs?
20 Q Right.
21 A Let me get my study here. I've got some numbers there. I
22 think it was 272 --
23 MR. BELLINGHAM: Why don't you look at your study?
24 MR. HOFACKER: I will look at my study.
25 It was 100 -- these are primary jobs -- it was 128 at the
26 plant, including the transmission - 128 there versus -- let's
27 see -- versus 82% of 342, whatever that comes to. That's
28 something under 300.

1 Q Do you prefer 2 1/2 to 1?
2 A I would.
3 Q O.K. Let's take 2 1/2 to 1 in terms of the number of jobs
4 that would be generated by rail versus by the plan for
5 Colstrip 3 and 4. Now, where in Exhibit #13, Mr. Hofacker,
6 have you taken into consideration, the multiplier effect of
7 primary jobs on rail haul?
8 A I think it's a multiplier of 2.4 just like on our -- like
9 on the plant and lines. Yes, sir on top of page 5, the
10 result was then multiplied by 2.4 long-term income factor
11 and escalated and that's to reflect 2.4 times for the secondary
12 jobs.
13 Q So, if we were still computing on the ratio of 2 1/2 to 1,
14 then when you take into consideration primary jobs and secondary
15 jobs for the Colstrip plan, you would have 2.4 times 1, or 2.4,
16 and for the rail-haul plan, you would have 2.4 times 2.5.
17 A Correct.
18 Q Or about 6.2?
19 A Yes, sir.
20 Q Where in Exhibit 13, Mr. Hofacker, have you considered additional
21 multiplier effects of the haul of coal by rail if there is any
22 momentum given to such transfer of coal, by the fact that you
23 did it?
24 A I don't think I understand what you are asking me.
25 Q Let me put it to you another way then, sir. If the Montana
26 Power Company, through its subsidiary, the Western Energy
27 Company, ships coal by rail, do you think that might have any
28 positive effects on other coal suppliers to ship coal by rail?

1 A Why should it?
2 Q You don't think it would?
3 A I don't see that it would.
4 Q You don't think for example, that the Western Energy would
5 find it economic to continue to ship coal by rail to other
6 places if it does so from Colstrip to Hot Springs or Spokane?
7 A Why should it any more than what we're already doing? We are
8 shipping coal now.
9 Q You're shipping coal now, east or south, and 110 miles west
10 to Billings?
11 A Yes, sir, because todate it has not been economic to ship it
12 out west.
13 Q But if you should decide to ship your coal another several
14 hundred miles west, do you not think that that would suggest
15 to Western Energy Company that they might consider further
16 shipments of coal west?
17 A They have seriously marketed in the west trying to sell coal
18 at one time.
19 Q You heard Mr. O'Connor tell us about how you didn't even bid
20 on the Boardman job because you --.
21 A Initially there was considerable activity contacting those
22 contemplating building thermal-fired plants in the Northwest.
23 Q I am asking you to assume, Mr. Hofacker, one of the assumptions
24 that you have made for the purposes of Exhibits 12 and 13,
25 that it is the actual shipment of coal from Colstrip to Hot
26 Springs, or to the Montana state line, you have on Exhibit 13.
27 Assuming that is a fact, with that assumption in mind, do you
28 not believe that the Western Energy Company, in those

1 circumstances would then be marketing additional coal west?
2 A I fail to see why, sir. Honestly I fail to see why.
3 Q I see. Well, then I'll ask you to assume that the Western
4 Energy Company would ship additional coal west on the same
5 rail lines that it had been shipping the coal to the Montana
6 state line that you assumed in Exhibit 13? Now we have the
7 two assumptions?
8 A Yes, sir.
9 Q All right. In making those two assumptions, would you not
10 agree with me Mr. Hofacker, that there would be still additional
11 jobs generated?
12 A Yes there would.
13 Q And those would be generated with primary jobs and also with
14 2.4 multiplier on secondary jobs?
15 A Yes, there would, if in fact, the coal was economically priced
16 so that the people to the west would buy it.
17 Q Where, Mr. Hofacker, closer than Montana, are there coal
18 deposits available to coal-fired facilities in the western part
19 of the states of Washington and Oregon, aside from Centralia?
20 A The Wyoming properties are relatively the same.
21 Q Relatively the same. Where would there by any closer coal?
22 A I belive there might be some small deposits in Washington or
23 Oregon, but I don't know if they're economically -- .
24 Q None found yet?
25 A No. There's Canada - Canadian is a possibility. There has
26 been discussions in that area in bygone years.
27 Q That the Canadians made some proposals for the shipment of
28 coal, indeed into a location in the state of Montana, where

1 they proposed that some generation occur?
2 A Yes, sir. Montana was one of the several locations being
3 investigated.
4 Q And those proposals were rejected?
5 A They were.
6 Q You would agree with me, would you not Mr. Hofacker, that
7 if utility companies in the west, from here, decided that they
8 wanted to build additional coal-fired generating stations
9 near their load centers, that they would have to look for coal
10 from the fields in Montana and Wyoming, wouldn't they?
11 A They would look, yes, sir.
12 Q No place closer?
13 A None to my knowledge. Utah might work into the act there but
14 I'm not sure that it would be closer.
15 Q There are some coal deposits, of course, in the Dakotas, but
16 that would be even farther away.
17 A Yes.
18 Q If you look at page 11 on Exhibit #13, that's your impact
19 economic graph?
20 A Yes, sir.
21 Q There's a big difference between the dotted line, which I take
22 to be your Colstrip present plan, and the solid line which I
23 take to be the coal shipment plan in the year 1975 to 1980?
24 A Due to the construction of the facilities at Colstrip yes, sir.
25 Q Sure. That's a temporary job and temporary infusion of
26 dollars.
27 A But sizeable dollars, sir.
28 Q Oh, very sizable -- substantial, yes indeed. We're dealing

1 with hundreds of millions of dollars, aren't we?
2 A Yes, sir. A little bit of the "buck in the hand is worth
3 a buck in the bush" or "the bird in the hand is better than
4 the one in the bush."
5 Q Sure. Where is the costs that are represented by the solid
6 line for 1975 to 1980?
7 A The construction of the 230 kv system was indicated on the
8 previous -- in the forepart of this study.
9 Q Where are the costs for upgrading rail facilities and purchas-
10 ing rail cars?
11 A Probably in there somewhere. If they are I think there was
12 some anticipation there. Let me look again at the study.
13 It would come in the period just prior to shipment of the coal.
14 Q That would be that 1975 to 1980 area, right?
15 A Yes, sir.
16 Q Where is that in your Exhibit 13?
17 A I would -- I believe it's included in the first column on
18 page 10. Now going back into detail on that -- .
19 Q Well, the first column on page 10 of Exhibit 13 coal shipment
20 is zero?
21 A Starting in '79 though it's -- O.K.
22 Q Starting in '79 you have some coal to take out of Colstrip?
23 A Just a moment here, let me look. I can't identify it from
24 the sheets I have here. I'll have to go back to Butte to
25 get the additional calculations.
26 Q As a matter of fact, the truth of the matter is, Mr. Hofacker,
27 isn't it, that you did not include the cost of the purchase
28 of rail cars or of the up-grading of actual rail facilities

1 in your study for Exhibit 13?
2 A Now, my thinking is clearing. Why should we because that
3 would be -- it would be reflected in the freight rate that
4 they would charge us for moving that coal and that was --
5 the freight rate covers all of that.
6 Q I see. In your view, the economic impact of hauling coal by
7 rail would not include the dollars actually expended during
8 1975 to 1979 on the purchase of rail cars or the up-grading
9 of rail facilities?
10 A I -- as I said before, I think that would be reflected in
11 your freight rates.
12 Q And have you done any study, Mr. Hofacker, of the cost of
13 electrifying those rails?
14 A There's been studies made of electrification, yes, sir.
15 Q Did you, with Montana Power Company, make any such study?
16 A We participated in some studies with Burlington Northern
17 of the rails to the south and east from Billings and we also
18 participated, for years, with the Milwaukee, on the electri-
19 fication completing the gaps -- filling in the gaps -- and
20 they chose not to do so.
21 Q When did you last participate in such studies?
22 A I think it's within two years ago.
23 Q Are you aware of the studies going on today by Burlington
24 Northern for the electrification of rails?
25 A I am aware of the one southeast from Billings and I -- it
26 seems like I have seen an inference somewhere they were looking
27 at other areas, but I am not involved.
28 Q Have you seen any studies done on the actual experience with

1 the use of electrified rails and the effects that that has
2 on unit trained coal hauling costs within the last 6 months?
3 A I don't recall seeing such a study. It may very well be.
4 Q So if Burlington Northern, for example, should determine that
5 the better way to haul coal by unit train is on electrified
6 rails, then the cost of electrifying those rails will also
7 have to be included on the economic impact in Montana, wouldn't
8 it?
9 A I would presume so, yes, sir. I would see no reason why it
10 shouldn't.
11 Q And that's not included now, is it?
12 A No, sir.
13 Q Taking a further look at page 11, of Exhibit #13, after we're
14 through with the capital costs we have just discussed between
15 1975 and 1980, then for the next 7 or 8 years those lines
16 seem to go in parallel without any differential change, wouldn't
17 you agree?
18 A Yes, sir. That is the reason I said it is so sensitive to
19 coal escalation prices.
20 Q Is there anything else that it is sensitive to?
21 A I didn't say that was the only thing. I said I think the
22 escalation of freight rate is probably one of the most
23 sensitive area to it.
24 Q And if the freight rates go up more than what you have pro-
25 jected, then it will have greater impact in Montana?
26 A Right, it will decrease -- or increase -- the benefit -- or
27 the economic benefit of transmission over the rails.
28 Q I thought Exhibit 13 was to tell us how much economic impact

1 there was in Montana?
2 A I should think that statement I just made, over again.
3 Q Better make a revised addition on that one.
4 A No, sir it would -- that statement was in error.
5 Q The correct statement is that if the rail freight rates go up
6 then the economic impact in Montana will be greater on the
7 rail alternative?
8 A Because some portion of that revenue will find its way into
9 Montana. Yes, sir.
10 Q As I understand the way that Exhibits 12 and 13 were prepared,
11 you discussed them with Don Gregg and Wally Blankmeyer and
12 Bob Labrie and Dick Davenport and you set up some of the out-
13 lines of the data that should be included and then as the data
14 was massaged and prepared, occasionally there would be a re-
15 convening of the group and you would make sure that it was
16 moving along with good progress?
17 A Yes, sir.
18 Q And you discussed the relevancy of the study with the group,
19 is that right?
20 A Yes, sir.
21 Q What did you mean by that?
22 A How logic were the information we put -- or included -- in the
23 study? Did it, in fact -- was it worthwhile -- were there any
24 benefits of the transmission by wire or coal?
25 Q The relevancy of Exhibit 13, to the operations of the Montana
26 Power Company, Mr. Hofacker, is solely in connection with this
27 particular proceeding which we are engaged at the present time.
28 Isn't that true?

1 A Yes, it was a part of this hearing. Yes, sir. Sure it was.
2 Q However, I think you told Mr. Bellingham on direct examination
3 of Friday morning of last week, that Exhibit 13 was but one
4 of many ordinary course of business studies which you do at
5 the Montana Power Company?
6 A Well, it is. We make lots of studies.
7 Q Well, Mr. Hofacker, have you ever in the history of the
8 Montana Power Company, done a study to compare the impact of
9 coal by rail, on its economic benefits to the state of Montana,
10 with transmission of energy by wire?
11 A No, sir.
12 Q So it's not true that Exhibit 13, and the relevancy that you
13 see for it in connection with this proceeding, is but one of
14 many ordinary course of business studies, is it?
15 A It's a type of study, an economic study, that we are possibly
16 making, but the specifics of this, no, we've never done
17 before.
18 Q What you do in your ordinary course of business, is to run
19 economic studies, what you have never done in the ordinary
20 course of business is to run a study like Exhibit 13? Correct?
21 A I believe that is true, yes.
22 Q Assumingly, with respect to Exhibit 12, that's not one that
23 has been done in the ordinary course of business, either is it,
24 Mr. Hofacker, with the exception of the replication of that
25 study earlier in August of 1973, which you already discussed
26 for us?
27 A That is not true, sir, because we did do studies of movement
28 of coal around Montana, we studied the costs of moving coal

1 to the Eureka area, Montana coal, Colstrip versus the
2 Canadian coal. There were studies made that we saw the
3 information of, by the electric method by moving coal to
4 the Boardman area, so that it was not unique.
5 Q The Montana Power Company has never, itself, prepared a study
6 comparing the movement of coal by rail versus the transmission
7 of power by wire from Colstrip, Montana, except in the
8 occasion of Exhibit #12 in connection with this proceeding
9 and the earlier memorandum of August 28, 1973. Isn't that
10 true?
11 A In the economic analysis to see whether this Colstrip plant
12 1 and 2, as well as 3 and 4, are economically attractive to
13 the participants, we had to do economic studies in this area
14 to determine what the energy was going to cost when it got
15 to their system.
16 Q Where are those?
17 A Pardon?
18 Q Where are those?
19 A Where are those studies?
20 Q Yes.
21 A They're in the studies -- economic studies -- on 1 and 2 and
22 3 and 4.
23 Q Actually, Mr. Hofacker, you did do some studies prior to
24 embarking upon Colstrip 1 which looked at rail alternatives
25 but you never did any studies prior to embarking on Colstrip
26 3 by formal application, that looked at Colstrip 3 and 4 by
27 themselves except with respect to the two that I have mentioned.
28 Isn't that true?

1 A I believe that is true, yes, sir.
2 Q I believe you told me, Mr. Hofacker, Friday afternoon, about
3 the possibility of purchasing power for short-term periods
4 of time as a viable way to provide for your resources?
5 A Yes, sir.
6 Q Similarly, you had discussed with Mr. Bellingham on Friday
7 morning, the program that you have operated for many years
8 with the Montana Power Company to purchase your power for
9 short terms, but you concluded that continuing your purchase
10 of power on that basis was not economic. Is that right?
11 A On a -- well, yes, sir. The way you state it, I presume that
12 we concluded that doing this on a permanent basis, year after
13 year, was not economical.
14 Q The reason you assigned for that, sir, as I understood it was,
15 if you were to purchase power from new plants coming on
16 stream, you would be paying the full cost for that power in
17 the early years when the plants had not yet been depreciated,
18 as opposed to the more attractive economic alternative of
19 purchasing power from plants which had been depreciated in
20 later years.
21 A Yes, sir.
22 Q Why was it economic, Mr. Hofacker, to purchase power from the
23 two Wyoming plants in the first years in which they were
24 operated without having been depreciated?
25 A It was because it was for a short period of time, only.
26 As I said previously, it was for a period of about three years,
27 was all.
28 Q Why would it not be a viable alternative, always, for you to

1 do that?

2 A Because following that period of time, we could put a plant

3 on our own system, that would be adequately loaded, and there-

4 by our costs will be cheaper as we go out in time.

5 Q But, Mr. Hofacker, if you were able economically to purchase

6 power for the first few years of the operation of a non-

7 depreciated plant built elsewhere, you would still be able to

8 do that today, wouldn't you?

9 A We would, but our total costs are going to go up if we do

10 that, if we never put any generation on our own, but we can

11 do it in the early years because only a partially or lightly

12 loaded plant is more costly than buying it this way but as

13 you get up to about 50% load, it is cheaper to have your own

14 than to be buying from the others.

15 Q What study have you done to make that comparison?

16 A We did that with -- when we were in that -- .

17 Q When you were what?

18 A When we were negotiating the amps agreement that we alluded --

19 the one with the five companies; Washington Water Power,

20 Idaho Power, Utah Power and Light.

21 Q Where is that placed?

22 A In our files.

23 Q Could you produce that for me, please?

24 A I could. It's of 1965 or '66.

25 Q None since then?

26 A No, sir, because the same facts are true. What was true then

27 are true now.

28 Q I would like to look at that 1965 to 1966 study then. One of

1 the other reasons you assigned for Mr. Bellingham, in
2 generating, rather than purchasing power, was to make sure
3 that you had reliability in your system, right?
4 A Yes, sir.
5 Q And therefore, you wanted to have a mix of purchase power
6 and generating power?
7 A Yes, sir.
8 Q You wouldn't want to have all generated power because that's
9 not the reliable way to go either?
10 A No, sir. It would be best to have all of your own generation.
11 Q Well, if you did that you'd have to have all of your own
12 reserves, too, wouldn't you?
13 A Not necessarily so.
14 Q You mean you could have purchase power for reserves and
15 your generated power for your operating load?
16 A This is right but you wouldn't be using it for your base load
17 is what I -- I didn't say that but your base load generation.
18 Q I see. Well, for the greatest reliability for the kind of
19 generation that you would want to have, would be hydro, wouldn't
20 it?
21 A Yes, sir.
22 Q And you too, Mr. Hofacker, like Mr. O'Connor before you, used
23 the language, with respect to your plans for the future, that
24 you knew of no perfected plan for additional resources, when
25 asked the question "Do you know of any plans?" May I infer
26 from that, Mr. Hofacker, that you know of non-perfected plans?
27 A We're always planning. We've got a lot of pots boiling on
28 the stove all the time as to what our possibilities are if

1 this happens.
2 Q O.K.
3 A You don't zero in until you have to, on them.
4 Q Good. I wonder if you could tell me, Mr. Hofacker, what
5 part of the plans that you have now are not perfected, if you
6 don't give Colstrip 3 and 4?
7 A Reiterating exactly what I said the other day, first we would
8 try to buy if there's some available, and we have serious
9 doubts if this is true, secondly, there is -- the only
10 alternative for this time frame is gas turbines, assuming we
11 can get the fuel, gas or oil-fired turbines, and thirdly,
12 just reducing our reserves and maybe ultimately interrupting
13 the interruptible loads. If we have to go farther than that,
14 why the rationing of the firm load, capability.
15 Q There is one you told us about on Friday of last week which
16 you didn't mention just now and that's participating with
17 other parties?
18 A That's what I meant by purchasing elsewhere, and I don't know
19 that there are any places, or projects coming on line in this
20 period of time, where we could get power, but later than this,
21 yes.
22 Q You know, do you not, that there are in fact, plants coming on
23 line in 1979, 1980, 1981, 1982, and 1983 someplace in the
24 Pacific Northwest, coal, nuclear, hydro or some kind?
25 A Yes, sir.
26 Q Are you telling us that you want the Board to believe that you
27 have investigated the purchase of power from all of those
28 plants and have found out that no such power is available to

1 you?
2 A I have not, sir and the reason not, is because with all of
3 those coming on, the total area is deficit.
4 Q Of course, you know that's not true with respect to peak,
5 don't you?
6 A Yes, but energy deficient it is.
7 Q And we know that by 1984 and 1985, that's not true for
8 energy either.
9 A Yes, sir. That's true but it is well past the period where
10 we are going to be hurting badly.
11 Q So for the time frame that we're talking about we're looking
12 at the years 1979 -1884, is that right?
13 A Yes.
14 Q And in that time frame, your alternatives are to purchase
15 power from somebody else, and you have not investigated which
16 of the people from whom you might be able to purchase power
17 or would have anything available, in that time frame?
18 A That is not correct, sir. We have investigated where we think
19 it might be available.
20 Q Oh.
21 A And have found none.
22 Q Let's take a look, Mr. Hofacker, --
23 HEARINGS EXAMINER: Is this going to be a new subject
24 matter that will take you awhile, Mr. Shenker? It's just
25 about two minutes to twelve.
26 MR. SHENKER: Yes, it will take a good 5 or 10 minutes
27 in this particular area.
28 HEARINGS EXAMINER: Do you have any objection to

adjourning for lunch at this time?

MR. SHENKER: Oh, that's fine.

HEARINGS EXAMINER: Very well, we'll adjourn until 1:30. Mr. Ross, did you have something on the record?

MR. ROSS: Mr. Peterson asked that I turn over certain exhibits to the other side. I will do that at this time.

HEARINGS EXAMINER: What exhibits are you turning over?

MR. ROSS: The Exhibit 50B, Exhibit 66, Exhibit 66A, Exhibit 66D, Exhibit 68 and Exhibit 69.

HEARINGS EXAMINER: Thank you, sir. We will make those available to read. We'll get copies sometime.

(Noon recess)

HEARINGS EXAMINER: If the parties are ready, we will proceed.

CONTINUATION OF EXAMINATION OF ROGER A. HOFACKER

Cross-Examination, by Department of Natural Resources and Conservation

By Mr. Shenker

Q Mr. Hofacker, I wanted to back up to Exhibits 12 and 13 to make sure that I understood and that the record is clear with respect to your computation as to levelized costs. How do you get those? The annual levelized dollars that are referred to, as well as the overall increment?

A Well, your present worth -- discount -- whatever term you want to use of future expenditure back to its worth today or some specific date previous to that, you take each year's annual expenditure, present worth it back to the starting point that you're looking at in your study. You add those up and that is the present worth of the total expenditures. Then, if you take what you could call - I'm at a loss for the term I want -- an annual investment -- put it in at this same rate of interest. Through the years you'll have the same accumulated dollars in value at the end of the term as your actual dollars were before.

Q Would that mean in connection with Exhibit No. 12, that if you invested $46,000,000.00 odd a year for 37 years, in each of those years the total over that period of time would be $1,830,000,000.00?

A With the accumulated interest on each of those deposits.

Q With respect to Exhibit No. 13, would that mean that if you

1 provided economic benefits by rail shipment of coal in Montana
2 for each year for 42 years at $14,200,000.00 a year, compound-
3 ing it at some appropriate interest factor, the total would
4 be $1,132,000,000.00 after 42 years?
5 A You said coal shipments for 42 years?
6 Q Yes.
7 A There aren't 42 years of coal shipment. There's a 42-year
8 period because the first five years is when the transmission,
9 the 230-KV transmission, was being built, and upon the comple-
10 tion in 1980, then you'll have 37 years of coal shipment, but
11 upon that basis, putting in one -- let's see -- the levelized,
12 yes -- $14,200,000.00 a year for 42 years.
13 Q Your levelized figure in Exhibit 13 applies to rail haul for
14 37 years and for transmission by wire for 42 years?
15 A No, sir, no, sir. The levelized figure is for rail haul of
16 coal for 37 years plus 42 years of the 230-KV transmission
17 that was built in lieu of the 500 in that case. For the 500-
18 KV transmission, it's the levelized of the period of construc-
19 tion plus the 37 year use of that line thereafter.
20 Q But you had 42 years in both cases whether you're studying
21 rail haul or transmission, but in the case of your rail haul,
22 you're dealing with 230-KV transmission for the first five
23 years, and that's true, also, in the case of transmission?
24 A The construction period of the 500-KV, yes, sir.
25 Q Just before noon, Mr. Hofacker, I was asking you, sir, whether
26 you had contacted each of the parties who is proposing to have
27 a facility for generating energy, come on-stream in the years
28 from now through 1985, and as I recall, your answer was that

1 you had contacted some of them, is that right?
2 A Yes, sir.
3 Q Which ones have you contacted for which facilities?
4 A Perhaps I misinterpreted your question. I thought you were
5 talking about purchasing of power, and maybe I didn't listen
6 properly to your question. You're asking me which ones we
7 wanted to participate in their plants?
8 Q As I understood it from your answer to Mr. Bellingham's ques-
9 tion last Friday on direct examination, there were several
10 alternatives to Colstrip 3 and 4 which you were discussing
11 with me again this morning, and one of those alternatives was
12 the purchase of power from somebody, and another of those al-
13 ternatives was the participation with someone else in existing
14 or planned facilities.
15 A I wasn't aware that I had included that in there, for the
16 reason that there were none coming on line that would have
17 surpluses available that we knew of at that period of time.
18 Q Which ones have you contacted?
19 A We contacted our neighbors --
20 Q Which neighbors?
21 A Utah Power and Light Company, Idaho Power Company -- I think
22 we may very well have had discussions with Pacific, since they
23 border us on the south. Utah, in turn, is in contact with
24 many other companies as far as availability of surpluses, so
25 when we talked to Utah, it reflects other areas in the South-
26 west who may or may not have surpluses, but those were two in
27 particular, and there were others, I'm sure.
28 Q Let's take those one at a time. You contacted Utah Power and

1 Light Company in connection with what kind of facility?
2 A Availability of power for purchase.
3 Q When?
4 A In this period of time.
5 Q From 1979 to 1984?
6 A No, sir.
7 Q What period of time?
8 A For the 1978, 1979, 1980 period.
9 Q Did you ask anybody at Utah Power and Light Company about
10 participating with them in generating resources?
11 A We had had previous discussions several years ago concerning
12 this matter.
13 Q Since then, have you?
14 A We have not, sir.
15 Q Have you ever had any discussions with the folks from Utah
16 Power and Light Company about participation in the Huntington
17 Canyon project in Huntington, Utah?
18 A No, sir.
19 Q When do they plan to have their next facility go on line there?
20 A I'm not certain, but I think '78, '79, somewhere in that area,
21 but as I understand it, there's not much in the way of surplus
22 in that plant.
23 Q What size?
24 A I think it's a 440, I believe -- in that area.
25 Q Have you contacted Utah Power and Light Company with respect
26 to the Emery County, Utah plant?
27 A No, sir.
28 Q When is it going on-stream?

1 A I don't recall the date of that one, sir.
2 Q Would you accept June of 1980?
3 A It could well be. I know they have several plants planned.
4 Q What's the size of that one?
5 A I'm not certain, but I would guess it to be another 440. This
6 is the size that they seem to be putting on in this period of
7 time.
8 Q The one that's scheduled for June of 1977, actually is 430
9 megawatts; the one scheduled for June of 1980 is 530 megawatts.
10 A Okay, give or take a hundred megawatts.
11 Q Is there another utility company that operates in the Utah
12 area?
13 A I don't rightly know.
14 Q Does the U. S. Bureau of Reclamation operate in Utah?
15 A Yes, sir, but I didn't consider them a utility company. They're
16 an agency that operates, yes, sir.
17 Q Do they plan to bring some facilities on-stream?
18 A It could be. I couldn't enumerate what or where or when.
19 Q You said you contacted the Pacific Power and Light Company
20 in addition to the Utah Power and Light Company?
21 A I said I assume that we did. I'm not positive that we did.
22 The reason I say I assume we did is because they border us.
23 Of course, we're talking with all of these companies fairly
24 frequently about loads and resources and availability of sur-
25 pluses.
26 Q Has any contact been made with which you are personally famili-
27 ar between the Montana Power Company and the Pacific Power and
28 Light Company for the purpose of purchasing power from the

1 Pacific Power and Light Company during the years 1979 through
2 1984?
3 A I know of none.
4 Q Has any contact been made between the Montana Power Company
5 and the Pacific Power and Light Company for the purpose of
6 engaging in joint generating facilities with those two companies
7 other than the Colstrip project?
8 A None since the negotiations in the '60's.
9 Q That was your AMPS work?
10 A Yes, sir.
11 Q Whom else have contacts been made to see about the possibility
12 for either the purchase of power or of joint generating facili-
13 ties?
14 A I don't believe we contacted any of those in the Northwest,
15 because there was a deficiency in this area for energy in par-
16 ticular, and it was obvious that that was not the place to
17 look. We may have had discussions on purchase with the USBR,
18 but I'm not sure of this.
19 Q Mr. Hofacker, is it your testimony that every company in the
20 Pacific Northwest is energy deficient in each of the years
21 1970 through 1984?
22 A No, sir.
23 Q Are those companies who are not deficient with energy in the
24 years 1979 through 1984 companies with whom you have had any
25 contract for the purchase of power during those years?
26 A We have not contacted companies in that area for the very
27 reason that I've stated four or five times, that there was a
28 deficiency of energy among the companies when you totaled it,

1 so when you're looking for something to buy, you go to the
2 place where there's a surplus.
3 Q And you have not contacted those companies that are not de-
4 ficient in energy in the Pacific Northwest?
5 A Not to my knowledge. Looking at the tabulation you referred
6 me to originally, there's a deficiency in energy all the way
7 through there, sir, for the whole Northwest.
8 Q We'll come to that later, Mr. Hofacker, but of course, that's
9 not true, is it, for the years 1984 or 1985?
10 A The period that we needed to purchase for, sir, is the '79-'80-
11 '81.
12 Q Just those three years?
13 A That's the period that's critical now. We've got a chance,
14 perhaps, of doing something beyond that period, but this is
15 the period we have to serve our load.
16 Q What is it you're going to do beyond '81?
17 A Well, if 3 and 4 are built, we'll be utilizing Colstrip.
18 Q With surpluses?
19 A Some surplus until 1983 in peak and until about 1987 in energy,
20 and that we'll undoubtedly make available to those who are
21 short energy as shown in those tables, or elsewhere.
22 Q What will you do beyond 1981 if you don't get Colstrip 3 and 4?
23 A We might be able to buy some beyond that period.
24 Q Now we're looking at 1979, 1980 and 1981 as the critical years?
25 A Well, '78 through '81 are the critical years that 3 and 4
26 were designed for.
27 Q '78 is no longer in the running as a year when Colstrip 3 and
28 4 would help you?

1 A That's right. It's still a critical year, though.
2 Q But as far as this proceeding in which we are presently engag-
3 ed, Mr. Hofacker, we're talking about the latter part of the
4 year 1979 and the years 1980 and 1981?
5 A Yes, sir.
6 Q For that period of time, have you contacted any of the utili-
7 ties to the east of Montana to determine the possibilities of
8 purchasing power from them?
9 A No, sir, for the reason I stated again the other day, of the
10 inadequacy of the east - west ties to keep them closed, to get
11 a firm source of power to the east of us.
12 Q We did talk about that the other day a little bit, Mr. Hofacker,
13 and I think what you told me was that you'd have to build a
14 couple more 500-KV transmission lines?
15 A Either that or a DC connection.
16 Q The same kind of thing you're talking about in connection with
17 Colstrip?
18 A Not the same magnitude, sir, no.
19 Q What would be the two end points of the transmission line that
20 you believe would be necessary in order to get power flowing
21 back and forth between here and the east?
22 A For an adequate interchange of power supply, there's probably
23 a thousand miles across there that needs to be bridged some
24 way.
25 Q What size lines would you need?
26 A AC, probably 765 KV lines; DC, plus or minus 450.
27 Q How much load would each line carry safely in normal operation?
28 A About 3500, I believe. I think that's about right, which, in

1 the 80's, over 2500 would have to be there just to be able to
2 schedule the base load of 1200 or 1300, and that is all the
3 useful firm power you could schedule across those ties.
4 Q Are you familiar with the Central United States Study of
5 Transmission Interconnection?
6 A I certainly am.
7 Q What does that say with respect to transmission requirements
8 from here to the east?
9 A Just what I was saying, sir.
10 Q What type of megawattage is implied or stated explicitly in
11 that study?
12 A I believe at the present time there is an inadvertent inter-
13 change of twelve to fifteen hundred megawatts; above that, you
14 have the largest plant on either side is probably eight to
15 nine hundred, which, in the case of an outage, could cause
16 flows like that would be not scheduled. When you get out into
17 the 80's, I think the inadvertent grows considerably and the
18 size of the plant in the 80's would be something in the eleven,
19 twelve hundred megawatts, making a total of 2500 or so capacity
20 necessary before you could have room for firm scheduling of
21 power to carry firm load.
22 Q As a matter of fact, the Central United States Study of Trans-
23 mission Interconnection projected by the 1980's there should
24 be between here and the east plant power of an additional
25 1400 megawatts to the 2500 to which you refer, for a total of
26 3900 megawatts, isn't that true?
27 A I believe that number is correct, yes, sir, and I believe when
28 you say the Central United States Study, is this the western

1 United States, central United States, inter-tie study that
2 you're referring to?
3 Q Yes.
4 A The WASCUS, as many people call it.
5 Q Yes. Is there any company to the south of the Montana Power
6 Company besides PP&L and Utah Power and Light Company whom
7 you have contacted to see about the possibility of purchase
8 of energy for half the year 1979 and the years '80 and '81?
9 A I believe that through Utah, Utah made some inquiries of the
10 Public Service of Colorado, but I don't believe that we con-
11 tacted the Public Service of Colorado directly.
12 Q Anybody else?
13 A I think Utah was also in touch with Arizona Public Service,
14 and there could well have been others in that area, but Utah
15 is the one we look to for availability of surpluses in the
16 Southwest.
17 Q No direct contact by the Montana Power itself except for Utah?
18 A No, sir, because we would have to get permission from Utah to
19 move it through their system to our system.
20 Q You'd have to wheel for it?
21 A They would, but they would have the hold on the valve as to
22 whether we could or couldn't.
23 Q Just as you have to get wheeling permission from the Bonneville
24 Power Administration if you're going to run power from Colstrip
25 to the West Coast of the United States?
26 A That portion that's over their system, yes, sir.
27 Q On Friday, Mr. Hofacker, you were also discussing with us, sir,
28 the Environmental Protection Department of the Montana Power

1 Company?
2 A Yes, sir.
3 Q That was created in late 1970, was it not?
4 A Yes, sir.
5 Q Prior to that time, the Environmental Department, such as it
6 might have been, was under your direction itself?
7 A Yes, sir.
8 Q And you had nobody full time delegated the responsibility to
9 be an Environmental Department?
10 A We did not.
11 Q Now, in order to tell us about the work of the Environmental
12 Department, you relied, did you not, Mr. Hofacker, on a
13 memorandum that Carl Anderson prepared for you for that pur-
14 pose?
15 A Yes, sir.
16 Q Do you have your copy of that handy?
17 A I was just looking for it. I didn't know whether you were
18 going to go that far with it or not. I shall continue looking.
19 I had it this morning, but I don't find it now.
20 WITNESS: Bill, do you have a copy of that for me to
21 use, please? (Mr. Bellingham gives copy to witness).
22 Q What's the date of that memorandum?
23 A Very recent, the 19th of May.
24 Q That was prepared for the purposes of this proceeding, was it
25 not, Mr. Hofacker?
26 A Yes, sir.
27 Q Carl Anderson was your only choice, I take it, for the position
28 of Director of the Environmental Department of the Montana

1 Power Company, is that correct?
2 A I wouldn't say it that way, sir. He was the final selection.
3 Q Did you consider other folks in the Montana Power Company
4 before you chose him?
5 A I'm sure many people were thought of before he was selected.
6 Q What were the particular qualifications that Mr. Anderson had
7 that led you to select him for that position?
8 A Well, first-off, his technical background would enable him to
9 understand technical publications related to environmental
10 problems, emissions' effect upon vegetation and things like
11 that, plus the fact he had been involved in construction with
12 the Montana Power Company in the gas area, and any construction
13 project we had was involved with the environment, overall ad-
14 ministrative ability. These are many of the things that were
15 part of his selection.
16 Q Does Mr. Anderson have any technical background in environmen-
17 tal affairs?
18 A Not per se, although inherent in his experience, and with his
19 engineering background, there was his ability to absorb this
20 type of background.
21 Q When Mr. Anderson graduated from the Montana State University
22 with a Bachelor's Degree in Mechanical Engineering, he was
23 hired by the Montana Power Company as assistant operator at
24 the hydro facilities in Great Falls, was he not?
25 A Yes, sir.
26 Q Two years later he was transferred into the Gas Department,
27 where he was a meter inspector and transmission engineer in
28 the east gas transmission line until 1956?

1 A Yes, sir.

2 Q Then he was transferred to Butte as the gas engineer concerned

3 with the measurement of gas and its production and distribu-

4 tion?

5 A Yes, sir.

6 Q Then he was involved in the installation of measurement

7 facilities in Missoula and Hamilton in 1956 and 1957 and for

8 gas equipment?

9 A Yes, sir.

10 Q In 1958, he became a gas production engineer and spent his

11 time on exploration efforts in planning the future of gas re-

12 quirements?

13 A He did.

14 Q That's the job he held until 1966, when he became an adminis-

15 trative assistant to the Vice-Chairman of the Board responsible

16 for gas and oil explorations and operations?

17 A Yes, sir.

18 Q What was the technical background that he gained during that

19 period of time that equipped him to be an environmental mana-

20 ger?

21 A I would say the practical field experience, plus the engineer-

22 ing background, and he was not hired to be an expert in environ-

23 mental matters, but the one to oversee and be responsible to

24 see that the proper studies were made concerning the environ-

25 ment, and that the operations of the company took cognizance

26 of the environmental requirements.

27 Q Prior to 1970, when he became the Manager of the Environmental

28 Protection Department, it is true, is it not, that Mr. Anderson

had never had any specific assignment with respect to environmental protection?

A Right.

Q His actual contact in connection with the Colstrip project was to facilitate the logistics necessary for other people to do their work, wasn't it?

A Plus to help interpret some of the work, too, that was done.

Q Well, he had no responsibility, for example, in connection with the Westinghouse Environmental folks to do anything even in maintaining files, did he?

A They were doing the Environmental Analysis. He saw that they got the data and the cooperation necessary to get it done.

Q They'd tell him what they needed, and he'd have to get it from somebody, right?

A Yes, sir.

Q And if they came into Montana, he'd be the one to make the appointments for them to stay in whatever places they had to stay to see whomever they wanted to see?

A Yes, sir.

Q He was responsible for working out their itinerary to see that they got by car or train into whatever lodging places they needed?

A I don't know that he was involved in all those little administrative details, but they may have been done in connection with arrangements to make contacts with the proper agencies and so forth, in the state.

Q One of his assignments in connection with the Westinghouse study was to review the cost benefit analysis that Westinghouse

1 made, right?
2 A Yes, sir.
3 Q And before that time, Mr. Anderson had never reviewed or had
4 any experience with cost benefit analyses, had he?
5 A He may very well have had in his experience in the Gas Depart-
6 ment. He had none in our department.
7 Q You know that his deposition has been taken, do you not?
8 A I believe it has, but I haven't read his deposition.
9 Q Didn't he tell you that he had testified that he had had no
10 previous experience with cost benefit analyses?
11 A He did not tell me that, sir.
12 Q Who would be the man at the Montana Power Company most inform-
13 ed on the effects of atmospheric pollutants on human health?
14 A I would presume Carlton Grimm.
15 Q On human health?
16 A I would presume he's as well-read in it as anybody in the de-
17 partment.
18 Q Is he in the Environmental Department these days?
19 A No, sir, but inherent in the work he's doing in the generation
20 area, and with his background as a chemical engineer, he's
21 doing just that, as well as his other duties.
22 Q So you think Dr. Grimm has the best source of information on
23 the effects of atmospheric pollutants on human beings?
24 A He and Dan Berube -- he's involved in this area.
25 Q Mr. Berube, also?
26 A And I think Bob Labrie has knowledge in this area.
27 Q But you wouldn't expect Mr. Anderson to have any knowledge in
28 that area, would you?

1 A He has some knowledge in this area, but he's in Administrative
2 to see that this work is done.
3 Q Would you expect Mr. Anderson to be familiar with the chest
4 studies done by the Environmental Protection Agency on the
5 effects of atmospheric pollutants on human health?
6 A I would expect him to be acquainted with that work.
7 Q Would you be surprised to find out that he was not familiar
8 with it?
9 A I guess I would. With the wealth of material coming out every
10 day, though, I guess he can't get it all read.
11 Q I take it your view is that Mr. Anderson's job is to adminis-
12 ter the department and to coordinate the work done by con-
13 sultants so that somebody in Montana Power Company knows what
14 the consultants are doing, right?
15 A Yes, and to recognize areas where work needs to be done.
16 Q Wouldn't you expect Mr. Anderson, therefore, to be discussing
17 the effects of air pollution on animals?
18 A I would imagine he would be involved in such discussions, yes.
19 Q Would you be surprised to find out that he was not?
20 A I would. I would wonder how the question was put to him, sir,
21 because he has been in some discussions that I sat and listened
22 to as to the effect on animals.
23 Q I was going to read you the deposition of Mr. Anderson, but I
24 don't see it right here. That would end your question as to
25 how the question was put to him.
26 MR. SHENKER: Do you have the original of Mr.
27 Anderson's deposition up there, Mr. Davis?
28 HEARINGS EXAMINER: I don't have it up here. It may

1 be in the office. Is that the one that you took?

2 MR. SHENKER: I have my copy of Mr. Anderson's depo-

3 sition back in my room.

4 HEARINGS EXAMINER: I don't have any that have been

5 filed by you today.

6 (MR. SHENKER PROCURES COPY OF DEPOSITION)

7 Q This was the kind of question, Mr. Hofacker, on page 28 of Mr.

8 Anderson's deposition. "What consultants have you discussed

9 the effect of air pollutants with with respect to grazing ani-

10 mals? Answer: None, I don't believe."

11 A I can understand this. What I was alluding to were meetings

12 and seminars where I was sure he had heard discussions, but

13 his answer must be honest as to what he knows.

14 Q I suppose you would not be surprised to find out that a reason

15 he has had no such discussions with consultants is that the

16 Montana Power Company has never retained any consultants with

17 respect to the effects of pollutants on grazing animals?

18 A I believe some of the studies had to do with -- wildlife

19 studies -- doesn't that get into that? I think it does.

20 The Ecological Consulting Service?

21 Q Is Frank Dunkle a veterinary pathologist?

22 A I don't know what his qualifications are, sir, but he has some

23 people in his organization, or did, I assume, that knew some-

24 thing about it.

25 Q Are you not aware of the fact, sir, that the particular field

26 of science which is supposed to study the effects of anything

27 on animals is called the field of veterinary pathology?

28 A That sounds like a good field.

1 Q And it's true, is it not, that the Montana Power Company has
2 never retained a veterinary pathologist to give advice to the
3 Montana Power Company?
4 A That's true.
5 Q It's also true that Mr. Anderson has no formal training on
6 diffusion modeling techniques nor in meteorology, is it not?
7 A That's true.
8 Q You would expect Mr. Anderson, however, to be engaged in dis-
9 cussions with meteorologists that have been hired by the Mon-
10 tana Power Company, wouldn't you?
11 A That would more properly be the field of Carlton Grimm or Dan
12 Berube to discuss the mechanical or technical details, but I
13 would expect Carl Anderson to have some general knowledge as
14 to what they were talking about in this area.
15 Q You'd have to meet them to have that knowledge, wouldn't you?
16 A Well, that, or be present at a seminar or a discussion or a
17 meeting of the WSCC or NELPA. He's on committees in this area
18 in both of those.
19 Q You would expect, would you not, that Mr. Anderson himself,
20 has not done any field investigations on the effects of fluor-
21 ides on life, whether it's vegetable or animal?
22 A I would not be surprised at that, the fact that he did not
23 personally.
24 Q And you wouldn't expect him, personally, to have made any
25 studies, on the sulfur content of the coal in the Colstrip area
26 would you?
27 A No, because others have made that study.
28 Q You wouldn't expect him to engage at all in any efforts to

1 retain other people to determine the presence of ozone in the
2 atmosphere around Colstrip?
3 A No.
4 Q Nor would you expect him to take any steps to determine the
5 level of emissions from the Colstrip units?
6 A As I stated before, that was being handled by the generation
7 people.
8 Q So you wouldn't expect him to be doing that?
9 A No, but to be aware of what they were doing.
10 Q You wouldn't expect him to be discussing the Colstrip project
11 with any of the Indians, for example, in the vicinity?
12 A No, sir.
13 Q Now, Tom Smith became an assistant to Mr. Anderson in the En-
14 vironmental Protection Department of the Montana Power Company.
15 He has a Bachelor's Degree in Geography from the University of
16 Montana, does he not?
17 A He does.
18 Q He's an assistant environmentalist, is that right?
19 A Yes, sir.
20 Q Does he do work different from what Mr. Anderson does?
21 A Well, he gets into more of the administrative details as far
22 as helping getting reports out and analyzing documents and
23 regulations as they appear, and informing Carl and the rest of
24 us what appears to be in them that we should be interested in.
25 I believe this is his general area.
26 Q Has Mr. Smith participated in any studies directly?
27 A I don't know that he has. I believe he's been involved per-
28 sonally a time or two when some question arose as to what was

1 going on in a construction area. He was out in the field with
2 the proper state people to see what was going on.
3 Q You called Mr. Anderson, as I recall it, Mr. Clean, of the
4 Montana Power Company, is that right?
5 A Yes, sir.
6 Q And in order to be Mr. Clean, he has to be a devil's advocate
7 in favor of the environment?
8 A Yes, sir.
9 Q What has he devilishly advocated?
10 A He's the one that's supposed to keep us ever aware of the en-
11 vironmental aspects of various activities in the construction
12 projects that are involved. In his understanding, if it
13 appears that we're overlooking something, he's the one that is
14 expected to cover all the bases for us.
15 Q I understand what he's supposed to do. My question is, what
16 has he advocated in a devil way?
17 A I'm sure there have been many times when he's suggested that
18 certain things should be done, but I can't enumerate them, sir.
19 Q Enumerate one.
20 A Not at the moment, sir.
21 Q You expect Mr. Anderson not only to be an advocate, but also,
22 to give you cautions with respect to environmental impact, is
23 that right?
24 A Yes, sir.
25 Q Can you enumerate one of those for me?
26 A No, sir.
27 Q Now, in telling us about studies that have been performed by
28 Mr. Anderson's department, you told us that there was a range

1 resource study conducted by Montana State University, right?
2 A Yes, sir.
3 Q None of these studies have been done by Mr. Anderson's depart-
4 ment? They were all studies that he asked someone else to do?
5 A Yes, sir, they were not expected to be done by his department.
6 Q Is the Range Resource Analysis something that is not connected
7 with the Colstrip project?
8 A It is connected with the Colstrip project.
9 Q Then you told us about work done by Frank Dunkle of the Ecolog-
10 ical Consulting Service, wildlife studies. Is that work un-
11 connected with the Colstrip project?
12 A I don't think that at the moment it is.
13 Q Has it ever been?
14 A Not to my knowledge, no, sir.
15 Q Then you told us about an analysis involving infrared photo-
16 graphy at the Corette plant, is that right?
17 A Yes, sir.
18 Q Who did that?
19 A I think Dunkle's organization was connected with it. It seems
20 like we had somebody else, too, but I'm not certain of that.
21 Q Is that on the list of projects that Mr. Anderson told you
22 about in his memorandum to you of May 19, 1975?
23 A Yes, sir, Item 4 under Miscellaneous, the Reflected Infrared
24 Scan, Yellowstone.
25 Q When was that done?
26 A Within the last two years, I believe, having to do with the
27 thermal effect of the cooling water at the Billings plant.
28 Q You told us on direct examination about a coal analysis study

1 from Montana State University. Of course, that's in connec-
2 tion with the Colstrip project, isn't it?
3 A Yes, sir.
4 Q And of course, the Westinghouse Environmental Analysis is the
5 Colstrip project again?
6 A Yes, sir.
7 Q On the memorandum that Mr. Anderson gave you of the work that
8 he had done, there's one project in connection with the
9 Missoula - Hamilton 161-KV transmission line done by T. J.
10 Wirth and Associates, and it was called an environmental im-
11 pact analysis, is that right?
12 A It was, yes.
13 Q Is that something they did in connection with the application
14 you made for a permit for something?
15 A No, sir, it was done in connection with the Missoula - Hamilton
16 161-KV transmission line, that preceded a permit requirement.
17 Q Well, the reason you had them do that study was in order to
18 have some background material available for your application
19 for a permit to build that line, wasn't it?
20 A I don't recall exactly that it was.
21 Q Then there's a Billings to Great Falls 230-KV transmission
22 line, in which it looks like an environmental study was made
23 by the Charles T. Main Company, is that right?
24 A Yes, sir.
25 Q That was also in connection with an application for a permit?
26 A No, sir, that line was started before there was a need for a
27 permit; however, I believe there might be federal plans along
28 that way for which we would have to have one. I'm not certain

1 I'm correct in that statement, but I believe there might have
2 been.
3 Q Is Charles T. Main the engineer for that line?
4 A No, sir.
5 Q Was the study done by Charles T. Main one that was filed with
6 the governmental agency?
7 A I don't know that it was.
8 Q You just have it sitting around in your files some place now?
9 A I think it must be somewhere. It was done.
10 Q Don't you believe there was some sort of an environmental im-
11 pact statement that will be coming on that line?
12 A I think we have the analysis. I don't know that there's any
13 statement been made.
14 Q Is there a government agency which has prepared such a state-
15 ment or analysis?
16 A Well, I certainly haven't seen it, and if there is, I'm not
17 aware of it.
18 Q If there is, that is what the Charles Main study would be
19 there for?
20 A Yes, sir.
21 Q Then, the miscellaneous studies to which Mr. Anderson addresses
22 himself, leaving out the Colstrip studies for the moment, there
23 was one done on thermal discharge at the Yellowstone River?
24 A Yes, sir.
25 Q When was that done?
26 A Some time in the past three or four years. I'm not sure when.
27 Q In connection with what was it done?
28 A Discharge of the cooling water from the Corette plant.

1 Q In order to determine what?

2 A What effect it was having on the Yellowstone River.

3 Q Was that at a time that anybody was raising a fuss about that

4 or at a time when you were considering some additional facili-

5 ties or modification of your present facilities?

6 A No, I don't think that it was at the time of a fuss. I think

7 it was in light of, I believe, EPA regulations or state regu-

8 lations on temperature gradients in the rivers that were per-

9 missible.

10 Q Then, the Billings area is the last miscellaneous study. What

11 was that? It was also Frank Dunkle, but what was it?

12 A I think it had to do with fluoride.

13 Q In the Billings area?

14 A Yes, sir.

15 Q What was the problem with fluorides in the Billings area?

16 A I don't know that there was a problem, but we studied the

17 effects of the emissions from the Corette unit to see, in fact,

18 what effect there was on the environment in that area.

19 Q Is there a single study that has ever been performed by the

20 Environmental Protection Department that was not in connection

21 with a state-regulatory requirement or agency proceeding?

22 A I don't know how you could have any study that wasn't involved

23 in some agency.

24 Q You could be doing studies on environmental protection, Mr.

25 Hofacker, for your own background information. Has that been

26 done?

27 A I think it has.

28 Q Good, tell me the studies.

1 A Oh, I think this Billings area, for one. As far as what's
2 happened there, I think that some of these studies in the Col-
3 strip area were to find what the ambient is now versus what
4 may take place after the plant is operating.
5 Q Mr. Hofacker, you know that all of those studies done in connec-
6 tion with the Colstrip project were in order to obtain your
7 permits to build Colstrip, isn't that right?
8 A I'm not sure that all of them were necessarily in that area,
9 sir.
10 Q Tell me which one was not.
11 A I'm not sure. As I say, I'm not sure that all of them were
12 necessary, to get the permit.
13 Q When you were telling Mr. Bellingham about some of the alterna-
14 tives that you had studied before you went into Colstrip 1,
15 you described them as primarily economic studies some years
16 ago. Those would be the studies that Mr. Davenport did on the
17 computer analysis?
18 A His studies would certainly be among those. Whether they were
19 exclusively his studies or not, I have some doubts. I don't
20 know whether he did every one of them.
21 Q What environmental studies did you do in written form before
22 you went into Colstrip 1?
23 A I don't know of any.
24 Q You don't know of any?
25 A No, sir.
26 Q There were none, were there?
27 A I presume not. Well, I take that back. I think in right of
28 way and the reseeding of right of way and what grasses were

1 necessary in both our gas and transmission, and the manner of
2 treating vegetation on the right of way, and so forth.
3 That's in the environmental area.
4 Q Was that something done in the study for Colstrip 1?
5 A You said prior to Colstrip 1.
6 Q I see, you thought I meant unconnected with Colstrip?
7 A Yes, sir.
8 Q I meant prior to and in anticipation of Colstrip.
9 A Yes, we took environment into consideration in the site loca-
10 tion. We were looking at the environment, among other things.
11 Q You looked. Mr. O'Connor told us that you looked. I'm asking
12 for what written study of any kind there is that shows what
13 you looked at on environmental concerns?
14 A I don't know that I can identify one for you. I don't know of
15 them.
16 Q Next, Mr. Hofacker, you had told Mr. Bellingham on Friday of
17 the fact that the Montana Power Company for the last six years
18 has imported more power than it has exported?
19 A Yes, sir.
20 Q What is the projection for the next six years as to whether
21 the Montana Power Company will be a net importer or exporter of
22 power?
23 A We have not made any as such.
24 Q Are there any such studies that have been done, whether by
25 you or someone else?
26 A Not to my knowledge.
27 Q Doesn't the Western Systems Coordinating Council in its reply
28 to the Federal Power Commission, Docket R362, refer to net

1 importation and exportation of power?
2 A I believe it does.
3 Q What does that say as to what the Montana Power Company area
4 importation and exportation will be in the future?
5 A I would have to look at it. I don't know.
6 Q You don't know?
7 A No, sir.
8 Q Do you have any idea as to what the Montana Power Company's
9 projected importation or exportation will be?
10 A No, sir, I do not.
11 Q Is that not a matter of any concern for you, sir?
12 A It's a concern for some people in my department, but not one
13 that I'm currently familiar with at the moment.
14 Q Do you know anything about the designation called the Montana
15 area Nineteen Interchange Schedule?
16 A I've heard the term, sir.
17 Q Who does that refer to?
18 A Just what it says, to the best of my knowledge.
19 Q Well, what does it mean? What's an interchange schedule?
20 A That's moving the power one way or the other, from one area to
21 another.
22 Q And if there were a plus figure moving into Montana, that would
23 mean you're a net importer, and if there were a minus figure
24 moving into Montana, it would mean that you're a net exporter,
25 is that right?
26 A I think that must be the designation they have in there. It's
27 been in other reports the reverse, depending on how you looked
28 at it, but that would be the way of determining it, yes, sir.

1 MR. BELLINGHAM: What report are we referring to?
2 MR. SHENKER: I think we're referring to the Federal
3 Power Commission Docket R362 reply of the Western Systems
4 Coordinating Council, which was Exhibit D to your long-
5 range plan of 1973.
6 Q If you look at page 174 of that particular study, Mr. Hofacker,
7 what does that tell you about the Montana Power Company on
8 interchange for the year 1976?
9 A Well, now, area load includes more than just Montana Power
10 Company. I think this nineteen includes more than just us.
11 Q What's MP Co.?
12 A Yes, that's Montana Power Company.
13 Q All right, look at that and tell me whether it's a net importer
14 or exporter in 1976?
15 A I think it must be an importer, the way I add this up.
16 Q When it has a minus figure, you think it's going to be an
17 importer?
18 A I'm looking at it here. It says our load is 844 megawatts and
19 our generation was only 823 and we had a loss of 40 megawatts,
20 so that would have to be moving the power in to carry our load.
21 Q And you think that the minus figure -- by the way, what is the
22 figure by the minus figure?
23 A Sixty-one.
24 Q Minus 61. You think that that means that Montana is an im-
25 porter of 61 megawatts?
26 A Yes, sir, because you add up here, there's a load of 844, a
27 loss of 40, which is 884, and subtract power in of 61, leaves
28 you with the net generation within our area of 823.

1 Q Okay, turn to page 179.
2 A I have it.
3 Q Does that have MP Co. on it, too?
4 A 179 -- I see Montana rather than MP Co.
5 Q That would be the State of Montana, wouldn't it?
6 A Yes, sir.
7 Q Is the State of Montana a net importer or a net exporter?
8 A The State of Montana has been a net exporter, as we have
9 stated many times.
10 Q What does it show on page 179?
11 A It just shows an arrow that I'm looking at. Now, let's see.
12 I've got to get the symbols right. Okay -- megawatts in are
13 minus, plus are out, so we have 180 out and 187 out and 177
14 in, if I read this right.
15 Q Are you not familiar with the document, Mr. Hofacker?
16 A Not that familiar, no, sir.
17 Q As you sit there, looking at the Federal Power Commission
18 reply Docket R362 which you submitted to the Department of
19 Natural Resources as Exhibit D in your 1973 long-range plan,
20 can you tell me whether the Montana Power Company is a net
21 importer or a net exporter of power?
22 A The State of Montana is a net exporter. Montana Power Company
23 is a net importer.
24 Q How does that happen, that the State of Montana, as a whole,
25 is a net exporter of power?
26 A Because there's lot of generation that's not ours.
27 Q Whose generation is that?
28 A Federal Government plus Washington Water Power and there are

1 some real small plants Pacific owns plus Montana-Dakota
2 Utilities has facilities in Eastern Montana.
3 Q As you read page 179, Mr. Hofacker, what does that tell you
4 about the exchange of power between the State of Montana,
5 which I believe is designated as Area No. 19, and the State of
6 Idaho?
7 A That Idaho exported seven megawatts to Montana.
8 Q And how many megawatts did the State of Montana export to
9 Region 6?
10 A 88 megawatts.
11 Q And how many megawatts did the State of Montana export to the
12 Northwest?
13 A 99 megawatts.
14 Q And how many megawatts were used inside the State of Montana?
15 A Well, this doesn't allude to how much was used in Montana, it
16 just says what went in or out.
17 Q Well, if you run line 19 on the vertical axis with line 19
18 on the horizontal axis, doesn't that give it?
19 A I said Montana exported 180 megawatts.
20 Q And you get that by adding 99 and 88 and subtracting 7, right?
21 A Yes, sir.
22 Q So it is the case, then, that the State of Montana itself is
23 now a net exporter of power?
24 A It is.
25 Q How long has that been true?
26 A For some period of time.
27 Q Do you have any reasonable expectation that the State of Mon-
28 tana in the future will become a net importer of power?

1 A Our indications are that it will.
2 Q When is that?
3 A I believe it's in the '80's. I'd have to look at that
4 summary, but I think in the 80's we would be an importer.
5 Q If you take a look at 1976 load in that Montana area 19 inter-
6 change schedule on page 174 of that same document, Mr. Hofacker,
7 doesn't that give you a little summary there at the top that
8 tells you that the Bonneville Power Administration sends 57
9 megawatts to Montana Power?
10 A Yes, sir, that's our long-term contract.
11 Q Who's NPR?
12 A That's the new production reactor, the Hanford plant.
13 Q And that sends 45 megawatts of power to the Montana Power
14 Company?
15 A Per that Hanford contract that I alluded to in enumerating our
16 resources.
17 Q Is that correct?
18 A Yes, sir.
19 Q That's a total of 102 megawatts, is it not?
20 A Yes, sir.
21 Q That's what the Montana Power Company is importing from the
22 Bonneville Power Administration and from the Hanford project?
23 A Yes, sir.
24 Q And in the summary, it shows you that the Montana Power Com-
25 pany is exporting 315 megawatts to Puget Sound Power and Light
26 Company, doesn't it?
27 A Yes, sir.
28 Q If you just look at those three, doesn't that tell you that the

1 Montana Power Company is exporting 203 megawatts more than
2 it's importing?
3 A I don't know that it has to be interpreted that way, for the
4 reason that part of this export is Puget's ownership of the
5 Colstrip units.
6 Q This summary does tell us, doesn't it, that it's Montana Power
7 Company to Puget?
8 A From the Montana Power Company's area to Puget, yes, sir.
9 Q And of course you know that this is looking at a 1976 year in
10 which you had forecasted that Puget Sound Power and Light
11 Company would have 350 megawatts of the Colstrip area and the
12 Montana Power Company would have 350 megawatts?
13 A Yes, sir.
14 Q So even if you add in the Bonneville Power import of energy in
15 Montana from the Bonneville owned system outside of Montana,
16 you would still have on Area 18 to Area 19 a plus interchange
17 showing that the Montana Power is indeed an exporter rather
18 than importer, wouldn't you?
19 A When you take in Puget's ownership, and that is their plant,
20 not ours, that half is theirs, not ours, so we, as the Montana
21 Power Company, are not exporting to Puget. They're taking the
22 power from that plant through our system.
23 Q And in area loads and resources as reported to the Federal
24 Power Commission by the members of the Western States System
25 Coordinating Council, whatever it's called, of which you are a
26 member, it does show the Montana Power Company to Puget export,
27 doesn't it?
28 A Yes, sir, it does on this page.

1 Q And by the way, the way we get up to 350 megawatts for the
2 Puget share is according to the report to the Federal Power
3 Commission made by you and others from the Western States
4 Systems Coordinating Council that Puget gets 315 megawatts and
5 that 35 megawatts are lost?
6 A I believe that's right.
7 Q And the losses are as a result of the line loss because of the
8 distance in transmission, is that right?
9 A Yes, sir. No, sir, not totally, because there's 330 of the
10 net out of the plant -- in-house power -- so it's 15 megawatts
11 of loss in the transmission area.
12 Q And 20 megawatts lost in in-house power?
13 A Yes, sir.
14 Q Isn't that a pretty high percentage of megawattage to lose in-
15 house?
16 A Yes, sir.
17 Q What is the comparative loss of megawattage in a gas turbine
18 facility?
19 A Considerably less.
20 Q What is it in the hydro facility?
21 A It's a percentage, but nothing comparable to a fossil-fired
22 plant with scrubbers.
23 Q Just like one or two percent, isn't it?
24 A Yes, about that area.
25 Q Now, when Colstrip 1 and 2 both come on line, Mr. Hofacker,
26 you will agree with me, will you not, sir, that there will be
27 surplus power and therefore during that time that there is sur-
28 plus power, the Montana Power Company will certainly want to

1 sell that surplus?
2 A Well, we should.
3 Q That's true, isn't it?
4 A Yes, sir.
5 Q During that time, of course, you will be a net exporter, will
6 you not?
7 A Yes, sir.
8 Q How long will that be, by the way?
9 A As we said before, until we run out of peak in 1983 and out of
10 energy in 1987.
11 Q Let's turn back to the West Group Forecast, because you'd
12 reached that point in your direct examination last Friday where
13 you had discussed the West Group Forecasts. I think we covered
14 the first few pages this morning during your cross-examination.
15 A We were back and forth in it, as you recall.
16 Q Right. You'd raised the question of reserves, which sent us
17 into Section 3?
18 A And I found them, and all this and that.
19 Q Let's turn to the page entitled "New Generating Units Installed
20 During the Report Period," which covers from 1975 to 1983. Do
21 you find that?
22 A Is this in Section 2?
23 Q No, the very first section, just before the discussion of the
24 detailed report.
25 A Are you talking about page 2?
26 Q No. Now, first that lists various hydro facilities going in-
27 to operation between 1975 and 1981, does it not?
28 A Yes, I think that's the latest date on here.

1 Q July 1982 is the date of completion, even though you have May
2 of 1981 for the Bonneville plant as the initial operation and
3 you also have April of 1983 as the date of completion and July
4 of 1982 for the Libby Reregulating Plant?
5 A Yes, sir.
6 Q And I think we had earlier discussed the Grand Coulee facility
7 and in this West Group Forecast, it's listed for a 3900 mega-
8 watt nameplate coming on-stream in April of 1978 after initial
9 operation in August of 1975?
10 A Yes, sir.
11 Q The first reference to anything other than a hydro facility
12 is the Colstrip 1 that was scheduled for initial operation,
13 according to this West Group Forecast, for September of 1975?
14 A Yes, sir.
15 Q Now, if you look down that list, Mr. Hofacker, as I count them,
16 there are some 28 facilities referred to, from Ice Harbor
17 Hydro through Washington Public Power Supply System No. 5?
18 A Yes, sir, I didn't count them.
19 Q Of those facilities, 13 are hydro, one is a turbine facility,
20 Beaver Combustion Turbine Combined Cycle, 10 are nuclear facili-
21 ties, and aside from the Colstrip facility, there is only the
22 PGE coal-fired plant at Boardman and the Jim Bridger plant of
23 the Pacific Power and Light Company?
24 A Yes, sir.
25 Q Does that tell you something about the future of thermal power?
26 A Well, it says all of them are going to be nuclear, but there
27 isn't a possibility of getting that much nuclear on line, so
28 coal will have to fill in the gap.

1 Q What's the total amount of the nameplate rating of the facili-
2 ties that are scheduled to come on during this period of the
3 West Group Forecast, July 1975 to June 1986?
4 A 22,997 megawatts.
5 Q No, I'm talking about the new installations, Mr. Hofacker.
6 A Oh, I'm a line down -- 24,448 megawatts.
7 Q If you take the hydro installed capacity as of December 31,
8 1974, that adds 19,550 megawatts, right?
9 A Yes, sir.
10 Q And then Hanford Steam is another 800 megawatts and some
11 other thermal and miscellaneous plants are 1300 megawatts,
12 and they list Centralia at 1330 megawatts?
13 A Yes, sir.
14 Q And that's a total of an additional 22,997 megawatts?
15 A It is.
16 Q Now the Colstrip units 3 and 4 are listed, of course, for only
17 70% of their capacity -- that's 980 megawatts, right?
18 A Yes, sir.
19 Q And if you take 24,468 megawatts, that's the figure of the
20 total new installations less the 980 megawatts at Colstrip,
21 isn't it?
22 A The total nameplate rating of those units, yes, sir.
23 Q Now let's go on in the West Group Forecast. Turn to the next
24 section, which is called the West Group Forecast Detailed Re-
25 port. Under the section entitled "Load Estimates," there it
26 is described that the utilities are keenly aware of the need
27 for accurate load forecasts in the planning and scheduling of
28 resources to meet projected power requirements because the costs

1 of acquiring capital are at a historic peak. That's true,
2 isn't it?
3 A Yes, sir, they were at the time this was written. It's sloped
4 off somewhat now, at the moment.
5 Q But it is certainly true, is it not, that the utility industry
6 is very capital intensive?
7 A Always has been.
8 Q As opposed to being labor intensive?
9 A Yes, sir.
10 Q Therefore, it really is not economic in the long run for
11 society, if not for the utility industries themselves in the
12 short run, to schedule resources in advance of need, because
13 that would impose a very serious and adverse financial impact
14 on the customers of utilities, isn't that true, sir?
15 A Yes, sir. May we read the next statement, too, sir, converse-
16 ly?
17 Q Well, we can read the whole thing into the record. It's al-
18 ready in evidence, Mr. Hofacker, I'm just trying to get your
19 understanding and agreement with the statements that I'm asking
20 you about.
21 A I'm alluding to the two sides of the coin, though, sir.
22 Q Well, we've got lots of coins and they've got lots of sides.
23 I wanted to ask you, sir, if it was not your opinion, as well,
24 that the concerted efforts described on page 2 of this section
25 of the West Group Forecast to review methodology and procedures
26 utilized in making load estimates, and to investigate the
27 effect of factors such as price elasticity, conservation,
28 availability of alternate forms of energy, and the strains on

1 the total and on various forms of energy supplied, was not a
2 very good idea?
3 A Is this on page 2 that you're reading this? It is a very
4 good idea, wherever you're reading it from.
5 Q The bottom of page 2, last paragraph.
6 A Okay.
7 Q That work, unfortunately, at this point, is only in a pre-
8 liminary stage, isn't it?
9 A And we are a party to it.
10 Q Yes, recently having joined the FINUCC, you will be a party
11 to it, and one of the consultants whom you hired to help you
12 on this task is Dr. Kent Anderson of the National Environmen-
13 tal Research Associates?
14 A Yes, sir.
15 Q And when I say you at this point, of course, I mean, the
16 Pacific Northwest Utilities Committee?
17 A Right.
18 Q Now, what that work is intended to do is to give you input in
19 order to apply to your forecasting techniques now, because
20 now we are in a transitional period, aren't we?
21 A It could be termed that, yes, sir.
22 Q The reason we are now in a transitional period is that nation-
23 al and regional energy policies are uncertain, and so is eco-
24 nomic growth and life style, isn't that true?
25 A Yes, sir.
26 Q Now, we know that from system to system, Mr. Hofacker, there
27 are peak loads which differ. We've already discussed that,
28 but within the overall West Group area, peak load diversities

1 between systems result in an area peak lower than some of the
2 system peaks, isn't that true?
3 A As it does on any system. Yes, it is.
4 Q If you get big enough.
5 A No, even a small system. The peaks don't occur simultaneously
6 all around your system.
7 Q But you have to have diversion areas in order to find diver-
8 sion peaks?
9 A Yes, sir.
10 Q In Section 2 of the West Group Forecast, as it states on page
11 4 of the section we have been looking at, there is an enumera-
12 tion of various hydro projects which are under consideration
13 in the West Group area, but those are not included in the West
14 Group Forecast, are they?
15 A That's what the statement says, yes, sir.
16 Q And the thermal plants which are included in the West Group
17 Forecast are the ones that the utilities themselves agreed were
18 the ones that they wanted to have to meet the area's load re-
19 quirements through the years 1985 to 1986?
20 A They didn't say it quite that way.
21 Q The agreement was from the utilities, wasn't it?
22 A From the whole conference committee.
23 Q The committee is made up of utility companies, isn't it?
24 A Of all types, yes, sir, not just the participants in Colstrip,
25 the utilities industry in the Northwest.
26 Q In the Pacific Northwest Utilities Conference Committee, we
27 of course do not have the State of Washington and the State of
28 Oregon and the State of Montana or other states officially

1 represented as decision makers, do we?
2 A No, sir.
3 Q In fact, we'd have no state regulatory agency participating
4 in the decision making process with the utility industry in
5 any association regionally, do we?
6 A No, but they sure catch each one of us independently.
7 Q Only half of the Jim Bridger plant, after installation of the
8 second unit, is dedicated to serving loads in the West Group,
9 and two-thirds of the plant, after installation of the third
10 and fourth Jim Bridger units, is dedicated to serving the loads
11 of the West Group, right?
12 A Yes, sir.
13 Q Would you not agree that that means that half of the Jim
14 Bridger plant after installation of the second Jim Bridger unit
15 and one-third of the Jim Bridger plant after the installation
16 of the third and fourth unit, will be serving loads in Wyoming
17 and other areas outside of the West Group?
18 A I think that is true. I believe it represents the exact num-
19 bers of the ownership by Idaho Power Company.
20 Q And Idaho Power Company, like the Montana Power Company, is
21 not one of the members of the West Group?
22 A That's right.
23 Q So in order for us to see the extent to which the load from
24 the Jim Bridger plant should be available for the folks in the
25 West Group, we really should examine the needs and resources
26 of the Idaho Power Company, too, shouldn't we?
27 A Yes, sir, and we have been in contact with Idaho Power Company
28 through the years.

1 Q Now we know, of course, Mr. Hofacker, that the five partici-
2 pants in Colstrip have reduced load estimates this year from
3 what it was last year. That's true, generally, in the West
4 Group, isn't it?
5 A I believe it is. I haven't checked the figures exactly myself,
6 but I would believe so.
7 Q That is to say, not only is the load for next year, for exam-
8 ple, reduced, but generally speaking, down the line, there are
9 reductions in the load estimate for the West Group over the
10 years?
11 A It might be. I haven't investigated.
12 Q It is known, is it not, Mr. Hofacker, in the utility industry,
13 that when plans are proposed before they come on-stream, you
14 can expect, for one reason or another, whether it's state
15 agency permission and licensing, or federal interagency lead
16 agency determinations of who is supposed to give you what per-
17 mission, or strikes and walkouts, or weather, or differing de-
18 cisions among owners, for one reason or another, there will be
19 delays on many of the projects, won't there?
20 A Yes, sir.
21 Q And therefore, when a group of utilities sit down to do their
22 planning, they do not project their resources based upon the
23 assumption that every project would be available for commercial
24 operation on the original schedule date, do they?
25 A I don't think they do.
26 Q Of course not, because if the planning were done that way
27 among any particular group of utilities, then they would never
28 realize their planned capacity and energy within the time frame

they were planning?

A You're right.

Q So that means, I take it, Mr. Hofacker, in more layman's terms, that there's got to be a fudge factor in there some place, doesn't it?

A And this is this load growth and the 20% we're talking about. That is one of the factors.

Q Just putting it again in easy, hypothetical terms, if a bunch of utilities sat down and decided they needed ten facilities to be built over the next fifteen years and they set schedules for the building of those various facilities over that period of time, they would know, based upon good, hard -- or bad, hard experience -- that some one or more of those ten facilities is not going to come on-stream within the time provided or perhaps at all, isn't that right?

A It's entirely possible.

Q So when you look at the West Group Forecast, for example, of the various installations that are projected to come on-stream, you know, do you not, Mr. Hofacker, that some one or more of those facilities simply is not going to be made available?

A This is true.

Q Well, why not Colstrip?

A With the pressure of time and the delays that have already occurred, if Colstrip doesn't come on, we've got problems. There's no place to turn to other than those I mentioned. Now at one time, we thought there was an adequate fudge factor, as you say, in that area to take care of it, but that's been used up.

1 Q Since that time, the Pacific Power and Light Company, for
2 example, has rolled back its schedule to relax the building
3 of the Jim Bridger plant, hasn't it?
4 A It has, yes.
5 Q And if the Jim Bridger plant can come on-stream at the earlier
6 and scheduled dates, then the need of the Pacific Power and
7 Light Company for its 10% of Colstrip would be that much less,
8 wouldn't it?
9 A It would be if it was on in time. If it wasn't, I don't be-
10 lieve it was scheduled to be in lieu of Colstrip 3 and 4. I
11 think it was coming on at the same time as Colstrip 3 and 4.
12 Q As it is now, then, you believe the Pacific Power and Light
13 Company is going to be energy-deficient the year they have the
14 Colstrip 3 and 4 units available to them?
15 A You had best ask the Pacific Power and Light Company, because
16 I'm not informed.
17 Q You don't know?
18 A No, sir.
19 Q When you put together Exhibits 3 and 4, did you know then?
20 A Those putting them together for me knew, but I haven't studied
21 all the numbers, sir.
22 HEARING EXAMINER: Let's take a brief recess.
23 (BRIEF RECESS)
24
25
26
27
28

(Following a brief recess, the hearing reconvened at 3:25 P.M. on June 3, 1975)

HEARINGS EXAMINER: Very well, you may proceed.

Continuation of Cross-examination of Mr. Hofacker by Department of Natural Resources and Conservation

By Mr. Shenker:

Q Turn to page six of that same section of the West Group Forecast, Mr. Hofacker. That's entitled Milestones in the text, prior to the tabular form of the milestones.

A Yes, sir.

Q In continuing the discussion that we had previously about how it was pretty well known by the utility company participants that not all the projects were going to come on stream, in the discussion on milestones, it is the opinion of the utilities with which you agreed, is it not, that it is essential that all the sponsors of the individual products -- projects vigorously pursue their planned schedules in order that the inevitable delays can realize total resources?

A I agree with the inevitable delays realize total resources, but in spite of inevitable delays should realize the total resources.

Q Now, as I understand the process, everybody has to go full steam ahead if there are projects sponsored because we know somebody is going to be delayed, and if not everybody is going real fast to pursue their own projects, then the ones that are not delayed might not get on fast enough, isn't that the process?

1 A Yes, sir, and that's just what's happened in many sections of
2 the country.
3 Q And for Colstrip, you're the project sponsor?
4 A We're the ones that sees to it that it gets built, yes, sir.
5 Q You're called the project sponsor, aren't you?
6 A Yes, sir.
7 Q Now, these milestone schedules that are described in the
8 West Group Forecast were composed by considering the average
9 time in which plants were built as well as the impact of
10 procedures, including changing procedures for site approvals,
11 construction permits, licensing, and construction and opera-
12 tion, isn't that true?
13 A Yes, sir.
14 Q Now, the West Group does not include only the firm arrange-
15 ments for power within the West Group area alone, does it?
16 A I'm not sure I understand --
17 Q Well, there are interchanges of systems outside the West Group
18 area that are necessarily impacted in the West Group Forecast,
19 isn't that true?
20 A To the extent that there are firm contracts to that, I believe.
21 Q And there are, of course, as you know, firm contracts from
22 the West Group east, because you are one of the firm contract-
23 ing parties?
24 A Yes, sir.
25 Q So the resources in the West Group Forecast will include the
26 assignment of the Canadian Entitlement Exchange Power to
27 California utilities and the deliveries of power to the Cen-
28 tral Valley project in California, isn't that right?

1 A If there are some contracts providing for that, they would
2 have to.
3 Q Turn to page seven, bottom of the page, entitled Interchanges
4 With Systems Outside the Area. Now, you know, do you not,
5 Mr. Hofacker, that the West Group Forecast includes capacity
6 sales and exchanges to California utilities?
7 A That's what it says here.
8 Q And on the next page, as the West Group withdraws from the
9 Canadian Entitlement, there is an increase in the capacity
10 of deliveries from the Northwest to California utilities,
11 that's true, isn't it?
12 A Yes, sir.
13 Q And it would also be true, wouldn't it, Mr. Hofacker, that
14 the more you send to California, the less you have here?
15 A I don't believe that being sent to California is to the
16 detriment of those that they have here, because it's in con-
17 sideration of peaking and energy, and so forth. I think it's
18 to the economic advantage of the customers in the Northwest.
19 Q Because the times at which the power is sold provides some
20 economic benefit for the sellers?
21 A Yes, sir.
22 Q But generally speaking, it is true, is it not, Mr. Hofacker,
23 that the more power you sell outside your system, the less
24 you have available inside your system?
25 A That's right.
26 Q Turn to page nine, and when we talk about reserves, particu-
27 larly peak, that includes forced-outage reserves, maintenance
28 and load growth, delays in hydro projects, and all contingency

1 reserves, doesn't it?
2 A Reserve requirements do, yes, sir.
3 Q In addition, other energy reserves are taken into account by
4 the plant factor assumed on large thermal units, isn't that
5 true? Page 10, second paragraph.
6 A Yes, sir.
7 Q I beg your pardon.
8 A Yes, sir.
9 Q Now, at this very moment, you, as a member of the Pacific
10 Northwest Utilities Conference Committee, and all the other
11 participants in Colstrip, as members of the Pacific North-
12 west Utilities Conference Committee, are engaged in a review
13 of the capabilities of planned system hydro and thermal re-
14 sources, is that not true?
15 A Yes, sir.
16 Q Now, that review you would expect to continue on a regular
17 on-going basis, would you not?
18 A I believe it should.
19 Q And one of the functions of that review is to be able to re-
20 spond flexibly to new needs as they may appear, whether they
21 are greater or lesser than previously anticipated and new
22 resources as they may appear to be coming or not coming,
23 isn't that true?
24 A Yes, sir, within the limits of the business.
25 Q Now, let's return to the milestone schedule itself, about
26 which you testified under direct examination with Mr. Belling-
27 ham. I believe your view was that the figure of 62 months
28 from final site selection to commercial operation is a

1 perfectly good figure for folks outside Montana, isn't that
2 right?
3 A They have said so.
4 Q But you want to add, as I understand it, 45 months in addition
5 to that figure?
6 A Yes, sir.
7 Q The reason you want to do that is because you add 24 of those
8 45 months to milestone #1 on site selection, is that right?
9 A Yes, that was our experience in 1 and 2 and 3 and 4.
10 Q Actually, you didn't add any months at all for site selection
11 when it came to 3 and 4 because you already have 1 and 2,
12 isn't that right?
13 A That's right, sir.
14 Q So if you decided tomorrow that you wanted to build Colstrip
15 unit #3, a 350 megawatts facility, owned only by the Montana
16 Power Company, you'd have no time at all on site selection
17 to spend, isn't that right?
18 A We would have some time spent in the preparation of the
19 environmental -- or of the permit and the data, accumulating
20 the permit there, and that would be -- could be several
21 months involved in just preparation of the request for permit.
22 Q But you wouldn't need any time in deciding what site to
23 select, would you?
24 A No, sir, but in that site selection was included the time
25 for preparation of the request for a construction permit.
26 Q What you were telling us really was that in connection with
27 Colstrip units 1, 2, 3, and 4, it did take you 24 months to
28 select your final site, right?

A No, sir, it took us 24 -- approximately 24 months to select a site and prepare the request for a permit, had we done it from scratch with unit #3, with the siting law that came in in 1963.

Q It is the case that in your experience it did take you 24 months to go through final site selection and preparation of application for permits, isn't that true?

A Yes, sir.

Q From the time of your final site selection, where else do you add months to what appears on the milestone schedule following page eleven of the narrative discussion we have simply concluded in the West Group Forecast.

A Between there and the 52 months milestone 3.

Q Where do you add?

A Milestone 3, as I understand it, is the receipt of the siting permit, and it's going to take us, based on this hearing, at least 31 months to obtain it.

Q You would agree with me in reading this milestone schedule, would you not, Mr. Hofacker, that what this says is, if, at the moment you reach milestone 1, and you have selected your final site, you then file for environmental and siting permits and licenses, etc., ten months later you should have these permits and licenses?

A That's what that milestone says, and we've got 31 that we're -- it appears in this state.

Q Now, what this particular milestone schedule does not say is when you file for the permit?

A No, it just says when you get the permit, I guess.

1 Q And you don't disagree, do you, that from the time that you
2 receive the siting permit to the time of commercial operation
3 is 52 months?
4 A No, we do not.
5 Q Which means, I take it, that the construction time, from re-
6 ceipt of permit until commercial operation, is four years and
7 four months?
8 A And this is a comfortable time to get it done in.
9 Q That's not a tight schedule, is it?
10 A No, sir, it's a realistic schedule.
11 Q Now, of course, in order to make sure that your commercial
12 operation is ready at the end of that construction time,
13 you'd better make sure that some of your bigger pieces of
14 equipment, like your boilers and turbines are delivered by the
15 time that you're ready to start commercial operation.
16 A That means ordering on the 58th month.
17 Q What that means, I take it, is that six months before you
18 start construction you should have ordered your turbine and
19 boiler?
20 A Yes, sir.
21 Q Then if we just look at the milestone schedule that appears
22 on Exhibit 118 of the applicants, West Group Forecast, you
23 are not in disagreement, sir, are you, that 58 months after
24 you order your boiler and turbine you can be in commercial
25 operation?
26 A I would not be in disagreement with the qualification assuming
27 that we get the permit by 52 months. Now, we could have
28 placed the order and not received the permit, and then it

1 doesn't do you any good until you get the permit.
2 Q But, if we are to read milestone schedules 1-11, I suppose
3 the Montana Power Company interpolation, which you have given
4 us, means that sometime more than 10 months before milestone
5 3, you should have filed for your environmental and siting
6 permit, is that correct?
7 A Yes, sir, some 31 months before.
8 Q And that would be during the time of the site review and site
9 selection, wouldn't it?
10 A It would be following that time, yes, sir.
11 Q Well, you have a choice. Either you back up the final site
12 selection more than 62 months before commercial operation, or
13 you apply for the permit sometime before you have finally
14 selected your site?
15 A Yes, sir, with my numbers here, the milestone 1, in our
16 opinion, should be 93 -- wait a minute, I take it back, 83
17 months.
18 Q That's a 21 month difference?
19 A Yes, sir, 83 months instead of 62 as shown there.
20 Q Now, you will agree with me, will you not, Mr. Hofacker, that
21 if, at the time, you filed a permit for an application to
22 build Colstrip #1, you had then filed your application for
23 a permit to build Colstrip units 1, 2, 3, and 4, we would be
24 on the schedule which you are tracking by interpreting your
25 past history?
26 A Yes, sir, but we didn't know we were going to build 2, 3, and
27 4 at that time. We didn't know when that they were going to
28 be built; we didn't know when.

1 Q Let's keep going through the West Group Forecast and see if
2 we can finish the relevant comments that I wanted to ask you
3 to discuss with us in the particular forecast. If you would
4 turn with me, Mr. Hofacker, to the page entitled New Generating
5 Capacity Actually Installed, January Through December 1974,
6 at the beginning of Section II.
7 A We were in Section II here. Oh, no, there it is, okay.
8 Q That shows that there's a new plant in the Portland General
9 Electric Company that's been installed, called the Beaver
10 Plant in Clatskanie, Oregon. That's a combustion turbine
11 plant?
12 A Yes, sir.
13 Q That's 68.3 megawatts?
14 A Yes, sir.
15 Q That's one over which the veil of tears is shed?
16 A I'm sure it's in the group.
17 Q Then the Puget Sound Power and Light Company has some more
18 tears to shed, I assume, in the Whitehorn Plant near Ferndale,
19 Washington, with another combustion turbine and 67.5 megawatts
20 in November of 1974?
21 A Yes, sir, if they have to run it for energy rather than just
22 a few peaking hours a year as intended.
23 Q Then on the next page we come to the Bonneville Power Admin-
24 istration. I assume they're sheding no tears over their
25 hydro facilities.
26 A I wouldn't think so, sir; they've shed tears over the delays
27 they've received in them, I think.
28 Q And in the Bonneville facilities, we see, of course, the

1 various plants that are described. We have discussed most of
2 them already. The largest facility is, of course, the Grand
3 Coulee Third Powerhouse with some 3900 megawatts between
4 August of 1975 and April of 1978?
5 A Yes, sir.
6 Q Bonneville goes on for some two pages, and then we have another
7 hydro facilities district in Chelan County, Washington, which
8 has units 11 through 18, 8 in all, 50 megawatts each, from
9 May of 1977 to July of 1978.
10 A Yes, sir.
11 Q Then we come to the participants in the Colstrip project.
12 We have the Washington Water Power Company with the hydro
13 project on the Noxon Rapids?
14 A Yes, sir.
15 Q Puget Sound Power and Light Company is the one that's listed
16 for Colstrip, both for 1 and 2 and 3 and 4. I suppose that's
17 not technically correct?
18 A It is not, but it represents the portion in the West Group.
19 Q And they have the largest share outside the Montana Power
20 Company, so somebody just lumped it over there?
21 A Yes, sir.
22 Q Puget also has a couple of nuclear units called Skagit, is
23 that right?
24 A Yes, sir.
25 Q That's 1288 megawatts for each of those nuclear units?
26 A Yes, one in 1982 and one in 1984.
27 Q Do they have any participants with them in those projects?
28 A They do in unit 1, I'm sure, and I think the same is true

1 for unit 2, probably.

2 Q Who?

3 A I don't know. I know it's people out in the Northwest.

4 Q Not you?

5 A Not to date, sir.

6 Q Have you had?

7 A We have not asked; they have asked us. We said we have it

8 under consideration.

9 Q They've been asking quite a few folks, haven't they, to try

10 and find some more participants?

11 A They have.

12 Q Unsuccessfully, thus far?

13 A I wasn't aware that it was unsuccessful so far, but I hear

14 you say it.

15 Q Portland General Electric Company is the next one, and they

16 have, of course, the Trojan facility coming on stream this

17 year. That's a 1130 megawatt nuclear facility. We've talked

18 about the Beaver Combined Cycle at Clatskanie as to unit #1

19 already, but units 2 through 6 are also coming on, and when

20 they have all 6 of those combined cycle combustion turbines

21 at Clatskanie, Oregon, they'll have 150 megawatts capability

22 off of a 168 nameplate rating?

23 A Yes, sir.

24 Q The next Portland General Electric generating facility is

25 one called Carty Coal at Boardman, Oregon. That's a 550 name-

26 plate, 500 megawatt capacity expected, coal generating

27 station?

28 A Yes, sir.

1 Q July, 1980?
2 A Yes, sir.
3 Q Did you ask to participate in that one?
4 A No, we did not.
5 Q The next two that Portland General Electric have coming on
6 stream are nuclear facilities at Pebble Springs, in Arlington,
7 Oregon, each with 1260 megawatts of capability, July of 1982
8 and July of 1985. Did you ask to participate in either of
9 those?
10 A No, sir.
11 Q Now, the Pacific Power and Light Company's Jim Bridger units
12 2, 3 and 4 were rolled back; when was that November or
13 December of last year, or was it earlier this year?
14 A I believe only -- I think one of the units, they thought was
15 going to slip because of time; they moved it back up some
16 six months now, I understand, and I think it's unit #4 that's
17 been moved to September of 1979.
18 Q Now, I'm just wondering whether the dates that we have on
19 Exhibit 118 in the West Group Current Forecast are the rolled
20 back dates or the original dates?
21 A I believe it's the rolled back date, but I'm not certain. It
22 looks like the rolled back date to me.
23 Q So we have for one of the units, probably unit #4, September,
24 1979, an additional 500 megawatts from a coal generating
25 facility?
26 A Yes, sir.
27 Q Then we go to the Washington Public Power Supply System. Who
28 participates in that?

1 A Well, most of the public agencies, and I believe at each of
2 these plants there's some private participation with the
3 exception of -- I'm not so sure that there is in number 2. I
4 may be wrong.
5 Q Do the participants include the Washington Water Power Com-
6 pany and the Puget Sound Power and Light Company?
7 A They may very well; I'm not positive of this. I know there's
8 some of the participants that are in there.
9 Q These are all nuclear facilities, each having well in excess of
10 a thousand megawatts coming on stream from 1978 to 1983, five
11 of them all together?
12 A Yes, sir.
13 Q Have you asked to participate in any of those?
14 A No, sir, we are a participant in WNP #1, however.
15 Q That's the Hanford project?
16 A Yes, sir.
17 Q WNP #1 at Richland, Washington, which is listed on Exhibit
18 118, is the replacement of the Hanford project in September
19 of 1980, isn't it?
20 A Yes, sir.
21 Q Do you know whether you're going to participate in that?
22 A I think I misunderstood your question. WNP #1, we are par-
23 ticipating in that because our contract extended beyond the
24 expiring of the original Hanford.
25 Q You are now participating at this moment in WNP #1, which is
26 the Hanford extension?
27 A Yes, I guess it's designated as #1.
28 Q But, on Exhibit 118, the West Group Forecast, the listing of

1 WNP #1 is for a new facility coming on stream in 1980, isn't
2 it?
3 A In lieu of the one we're in now, and we are a party on that
4 one.
5 Q And you do intend to participate in that one in 1980, don't
6 you?
7 A We have a contract for that.
8 Q So my question, more properly, is limited to WNP #2, 3, 4,
9 and 5, for a total of 5230 megawatts of nuclear steam gener-
10 ating capacity from 1978 to 1983?
11 A Yes, sir.
12 Q As to those, you are not now asking to participate?
13 A That's right.
14 Q We talked a little bit ago about the fact that now included
15 in the hydro resources of the West Group Forecast are some
16 that are under consideration?
17 A Yes, sir.
18 Q The next page lists some of those that are under consideration,
19 does it not?
20 A Yes, sir.
21 Q Do you know what the total is of those units that are under
22 consideration?
23 A I have not added them up, no, sir.
24 Q Pretty substantial sum, isn't it?
25 A I presume that there would be; there's a lot of peak there.
26 I don't know if there's any energy, but a lot of peak.
27 Q Does the Bonneville Power Administration get into the energy
28 business as well as the peak business?

1 A They do, but if the facility won't increase the energy cap-
2 ability, they can't get any further into the energy business
3 with these units.
4 Q Does Bonneville now operate units which can be utilized
5 either for peak or energy?
6 A They actually don't operate any units. They market the power
7 from the Corps of Engineers' and the Bureau of Reclamation's
8 operation of those units.
9 Q More properly then, I suppose, I should ask you whether the
10 Bonneville Power Administration now markets power from
11 facilities operated by the United States Army Corps of Engi-
12 neers which can be used either for energy or peak.
13 A Those in existence now, yes, sir.
14 Q Such as at Bonneville itself?
15 A Yes, sir.
16 Q Grand Coulee?
17 A Yes, sir. You have all of the Columbia River drainage addi-
18 tions proposed for this period of time of some -- forget the
19 magnitude, but there's 167 megawatts total of energy in the
20 whole group, is all. In other words, the river is pretty
21 completely regulated now, so that there's a minimum of spill-
22 age, so we have lots of capacity, but no energy in these
23 projects, the hydro.
24 Q Why do they need all that additional peaking if they don't
25 get much more energy?
26 A This peaking mix with the thermal coming on. The peak can
27 utilize the extra energy in the thermal units; I mean firm
28 up the ability to deliver power.

1 Q If you didn't get all these additional peaking units coming
2 on stream, then it wouldn't do you any good to just have the
3 thermal units coming on by themselves, would it?
4 A Well, you could carry your loads, but you'd have a surplus of
5 energy, and so, if you didn't get these, maybe you'd be
6 looking to gas-fired turbines again or to pump storage or
7 something in that area.
8 Q That's again because of the load factor within the thermal
9 units?
10 A Yes, sir, the load capability, yes, sir.
11 Q Among the private utilities listed on the next page are those
12 who have some generating capacity under consideration in
13 hydro. Pacific Power and Light Company has about 785 mega-
14 watts under consideration on that list, is that right?
15 A Pacific Power and Light, and we're looking at the same page,
16 I believe?
17 Q The second page of the partial list of new generating capacity.
18 A Yes, sir, you're looking at Klamath River Development, Muddy,
19 and Yale?
20 Q Right.
21 A Yes, sir.
22 Q Let's turn to the second page of Section III. We already
23 looked at the first page in Section III, the summary of re-
24 sources and requirements. The first thing I wanted to ask
25 you about on that second page of the summary of resources and
26 requirements is footnote 2 on the bottom of the page, where
27 it says incremental losses from generator to border associated
28 with deliveries of contracts outside the area. What does that

1 mean?

2 A I presume somewhere in here would be listed the contract at

3 the border, and this would be the loss, as it says, from

4 moving it from the generation within the area to the border,

5 and this is what they deliver at the border's edge, the net

6 of those two.

7 Q This is again a line loss kind of thing?

8 A Yes, sir, unless -- well, I shouldn't say that so affirmative;

9 it may have something to do with in-house losses at the gen-

10 erating plant, but I don't know that that's the case.

11 Q Not very likely, since we're dealing largely with hydro

12 facilities?

13 A But it still takes some in-house power for each unit.

14 Q Now, if you would look with me at line 24 on that page; each

15 line is numbered.

16 A Yes, sir, I have it.

17 Q That's labeled Contracts to Pacific Southwest, is it not?

18 A Yes, sir.

19 Q And that's 522 megawatts?

20 A In 1975-76, yes, sir.

21 Q And that's what the West Group is sending down to the Pacific

22 Southwest?

23 A Evidently, I don't interpret it any other way.

24 Q Now if you look at the surplus or deficiency over total load

25 without reserves for 1975-76, that shows a deficiency of 479

26 megawatts, doesn't it?

27 A It does there.

28 Q So if you took the 522 megawatts out from contracts to Pacific

1 Southwest, then you wouldn't have any deficiencies?
2 A Right, the arithmetic would certainly say that.
3 Q But you can't take the contracts with Pacific Southwest out
4 because they're contracts, right?
5 A I believe they must be signed.
6 Q Contracts are contracts.
7 A Yes, sir.
8 Q But that does tell us, Mr. Hofacker, doesn't it, that in order
9 for us to understand the real resources and requirements upon
10 the West Group, we really should understand what the resources
11 and requirements are in the Pacific Southwest, doesn't it?
12 A No, I think only the deliveries that you've contracted to
13 send to the Southwest, sir.
14 Q Well, wouldn't it be kind of silly for us sitting here to
15 look at regional planning and say that the West Group should
16 send 522 megawatts of their valuable energy to the Pacific
17 Southwest if there was some great big surplus down there.
18 A I doubt that the Pacific Southwest would even buy it if there
19 was a sizable surplus down there, sir.
20 Q Well, contracts are contracts. They don't have any more
21 choice than the seller has at this point.
22 A As I've said before, a contract is maybe based on what you
23 can demand and what you have to pay for, but maybe the de-
24 liveries are not necessarily made under that, if they don't
25 need it.
26 Q But you'll agree with me, Mr. Hofacker, won't you, that in
27 order for us to make an intelligent decision about regional
28 planning here, we really should know what the needs and re-

1 sources are in the Pacific Southwest?

2 A I don't agree with you sir, because you could carry this clear

3 to New York City, if you wanted to go to the ridiculous aspect

4 of it.

5 Q Does somebody from here sell power to New York City?

6 A No, but ultimately someday the ties will be, and you can

7 keep going on and on and on, and I think there's some point

8 at which you have to stop.

9 Q Well, the point at which we stop is the point at which we

10 stop selling or stop interconnecting, isn't it?

11 A Yes, sir, and if you'll look at the contracts to the Pacific

12 Southwest, they diminish to 40 megawatts by 1983-84.

13 Q Why do you think that is?

14 A I presume that's the way the contract's written.

15 Q Well, why don't the folks up in the West Group area renego-

16 tiate their contracts and sell them some more down there?

17 A If they have surpluses, they may very well do it.

18 Q Well, you wouldn't think that the folks in the Pacific South-

19 west would sit back idly and not negotiate for contracts that

20 they badly need in power unless they had some power generating

21 resources of their own coming on stream?

22 A They have them, but I think they've had difficultly, as else-

23 where, in getting them on in time; plus, I believe, the cost

24 of oil enters into this picture, too.

25 Q Wouldn't you conclude from looking at this particular page

26 of the summary of resources and requirements, that the folks

27 down in the Pacific Southwest will probably have more gener-

28 ating resources available to them in 1984-85, so they don't

1 need the contract purchases from the West Group area?
2 A That might very well be, and it might be that there aren't
3 enough resources in the Northwest to supply them more than
4 that, too.
5 Q And we really don't know as we sit here today, do we?
6 A Other than what you see in the tabulations, no.
7 Q And you don't think it's necessary to know that?
8 A I think there's a limit to which you study how far you go,
9 and, as I say, if somebody's going to buy power from you,
10 they have a need for that power.
11 Q If you will turn with me, Mr. Hofacker, now to the Hydro
12 Plants - Chronological Projection of Nameplate Additions,
13 sheet 2 of 2 it's labeled.
14 A Where, at the top or bottom or --
15 Q You have to turn quite a few pages in the West Group Forecast,
16 and it's, as we know, not consecutively paginated.
17 A I have sheet 2 or 2; I did it fast.
18 Q Good. Now, this simply restates what we previously looked
19 at, in terms of the hydro facilities that are coming on
20 stream, the various utilities and companies and agencies, but
21 this does it chronologically, doesn't it?
22 A I guess so; I'm trying to see how we determine if it's
23 chronologically --
24 Q Well, we start with May, '75, and we run to July, '83, in
25 month and year.
26 A Oh, I'm looking at the wrong sheet 2 of 2 then. Okay, I'm
27 clear down to Section IV; I shouldn't be there yet, I don't
28 suppose, should I?

1 Q Yes, it is Section IV. It's the next to the last sheet in
2 Section IV.
3 A All right, I hadn't gone far enough then. Now, I have sheet
4 1 of 2, Chronological Projection of Nameplate Additions, and
5 going on down to sheet 2 of 2.
6 Q Right. Now, that's the same material we were looking at
7 before, but now it's in chronological order, right?
8 A Yes, sir.
9 Q That tells you, does it now, that the total amount of name-
10 plate megawattage available from hydro facilities, as of
11 July, 1983, is 28,487.3 megawatts?
12 A Yes, sir.
13 Q If we wanted to know what that was in any particular isolated
14 moment in time, like backing up to November of 1981, it
15 would be 27,751.5 megawatts?
16 A Yes, sir.
17 Q Now, since we started that compilation of sheet 1 of 2 in
18 December of 1974, with 19,549.5 megawatts, in order to find
19 out how much is coming on stream on those two sheets, we
20 would subtract the 19,549.5 from the 28,487.3, wouldn't
21 we?
22 A Yes, sir, and I've done it, and if my numbers are right it's
23 7747 megawatts of peak, 7747 megawatts of peak, I believe. No
24 I take it back; it should be 8747.
25 Q Try it again.
26 A Well, I did it on another table. Maybe I didn't go as far
27 here. I took from the January peak capability, 1985-86, and
28 I only took the Columbia systems, so you're correct. It would

1 be larger than that.

2 Q The total number if 8937.8 megawatts?

3 A Yes, sir.

4 Q That tells us how much in the way of additional hydro is now

5 definitely projected for the West Group, and that does not in-

6 clude the additional hydro facilities that were only being

7 considered, isn't that right?

8 A Right, and again, I wish to repeat that all of that is only

9 peaking capability, except 189 megawatts.

10 Q Now, your testimony, I take it, then is that the 8937.8 mega-

11 watts of additional hydro facilities coming on between January

12 1, 1975, and July 31, 1983, less than 200 megawatts of that

13 sum would be available for anybody in the world to use as

14 energy, is that right?

15 A That's all the increased energy capability of that system, yes

16 sir; that's all the increased energy capability.

17 Q But for any particular moment in time, in which energy is de-

18 livered to users, over an average figure annually, then all

19 of that is available in what you call peak?

20 A Yes, sir, but in the year you could supply an additional load

21 -- an additional load with this resources that would have an

22 energy requirement of that 180 some megawatts, is all.

23 Q What's going to happen to those other 8900, or so, megawatts

24 of power? Isn't it going to be delivered to somebody some-

25 time?

26 A As I've said before, it would be combined with steam, and that

27 would be delivered only over a short period of time. It would

28 be shaving peaks, a matter of 2,3,4 hours a day, perhaps.

1 Q Isn't it, as a matter of fact, Mr. Hofacker, the case, that
2 this peak will be combined with energy from hydro facilities,
3 from nuclear facilities, from gas turbine facilities, and
4 coal facilities in order to deliver the energy and peak as
5 necessary?
6 A Yes, sir, but the only increase you've got in the hydro fa-
7 cilities is 189 megawatts, that's all -- the statement I'm
8 making, that you have to have peak and energy to carry a load,
9 sir.
10 Q And the great increase listed in the West Group Forecast for
11 the period described here is in nuclear facilities?
12 A Yes, sir, those are energy units.
13 Q If you'll turn with me to the last page of the West Group
14 Forecast, Exhibit 118.
15 A I have it.
16 Q What is that trying to describe for us?
17 A The title says a 42 and a half month critical period average
18 load. That's the average energy load that you can carry in
19 those years with that reoccurrence of that 42 and a half
20 month critical period.
21 Q For example, in 1975-76, one of your partners, Pacific, is
22 listed as Pacific Firm, is it not?
23 A Yes, sir.
24 Q And the figure is 1768.49 megawatts?
25 A Yes, sir.
26 Q What is Pacific supposed to be doing with 1768.49 megawatts
27 in the year 1975-76 according to this page?
28 A What are they supposed to be doing?

1 Q Yes, what is this page telling us that Pacific is supposed to
2 relate to those figures with?
3 A Well, I would have to read back into it, because I'm apparently
4 not that conversant. I thought it was their capability dur-
5 ing that 42 and a half month critical period, to carry average
6 load.
7 Q That's how much energy they can deliver during critical
8 hydro?
9 A That's what I said.
10 Q That's what that means?
11 A That's what I assumed it to mean. I was misconstruing what
12 you were saying. I thought you said it meant something else.
13 Q Then if we wanted to know how much energy Pacific, Portland,
14 Puget, and Washington Water Power, that's your four equal
15 participants in the Colstrip project, had available as capac-
16 ity during critical hydro, as projected in the West Group
17 Forecast for '75-76, we'd add up those four figures, wouldn't
18 we?
19 A Yes, you would.
20 Q We could do that for every year, and we'd know how much each
21 of the participants had available for critical hydro, delivery
22 of energy, from 1975 through 1985?
23 A I believe that to be true.
24 Q You can put away the West Group Forecast now. You still have
25 on the desk there, Mr. Hofacker, Exhibit D to your Long-Range
26 Plan of 1973, do you not, the report of the Western Systems
27 Coordinating Council to the Federal Power Commission, Docket
28 R362? It's the blue volume on your brief case.

1 A Oh.

2 Q Turn to page 16, please.

3 A Yes, sir.

4 Q Now that is another estimated load and resource tabulations for

5 the years 1974, 5, 6, and 7 under adverse hydro conditions, is

6 it not?

7 A Yes, as reported in this April 1, 1972 report.

8 Q Would you expect that to agree with the Western Systems

9 Coordinating Council report of December 31, 1972?

10 A Not necessarily, because from April to December many things

11 could have happened, changed.

12 Q This particular page of the study describes 60 minute peak

13 demands in megawatts, is that right?

14 A Yes, sir.

15 Q And refers to both firm and interruptible loads, and refers to

16 resources that are available?

17 A Yes, sir.

18 Q What is the area encompassed by this report, do you know?

19 A If I read the title correct, it's the total area of the Wes-

20 tern Systems Coordinating Council.

21 Q That would be not just the West Group area; it would be the

22 whole area of the Western Systems?

23 A Yes, sir, the fourteen states plus Canada.

24 Q I don't remember if it's fourteen, but it's whatever number of

25 states that we've talked about before.

26 A Oh, I guess it's thirteen. I said eleven, and then there's

27 parts of two other states, so thirteen plus Canada.

28 Q Eleven states that we consider here in the west where the

1 eastern boundary is Montana, Wyoming, Colorado, and New
2 Mexico?
3 A Yes, sir, plus then there's South Dakota and Nebraska. North
4 Dakota is not in this, I don't believe.
5 Q South Dakota and Nebraska?
6 A Yes, sir.
7 Q A little bit of Canada is also included?
8 A Yes, sir.
9 Q For this entire area of the west, what does it estimate as the
10 margin over firm loads, year by year, from 1974 to 1977?
11 A This says 18,563 megawatts in August of 1974.
12 Q Why don't you put it in percentage terms. It'd probably be
13 a little easier for the record.
14 A 28.7 percent in August of '74, 25.2 percent in December of
15 '74.
16 Q 1975?
17 A 30.5 percent in August of '75, and 24.9 percent in December
18 of '75.
19 Q 1976?
20 A 28.6 percent in August, and 24.5 percent in December. In 1977,
21 27.8 percent in August, and 24.0 percent in December of 1977.
22 Q Now this margin, is that what we sometimes refer to as re-
23 serves?
24 A I think it could be included as that, or interpreted as that.
25 Q That's all peak, isn't it?
26 A The title is peak, yes, sir.
27 Q And it's 60 minute peak, isn't it?
28 A Yes, sir.

1 Q You would expect a 60 minute peak to be higher than a four
2 hour peak, for example?
3 A Yes, it would, depending, if it's a peak time of the year,
4 sure it would be.
5 Q Now turn to the next page. That'll take you to energy, won't
6 it?
7 A Page 17, yes, sir.
8 Q Just as we were looking at peak before, now we look for again
9 the entire area of the Western Systems Coordinating Council
10 for 1974 through 1977. Would you again tell us, Mr. Hofacker,
11 what is the margin over firm load?
12 A Do you want me to read the whole list all the way across again
13 or give you the maximum-minimums to save time?
14 Q Well, why don't you just give us the --
15 A I was going to say the minimum margin is 22.2 percent in Au-
16 gust of 1975 -- or 21 -- wait a minute, I'd better read them
17 all, or I'm going to get fouled up.
18 Q Okay.
19 A The minimum is 20.8 percent in August of 1976, and the maximum
20 during this period is 26.6 percent in December of 1974.
21 Q Now, if you'll turn to page 18, that'll take us from 1978 to
22 1981, won't it?
23 A Yes, sir.
24 Q First we go to 60 minute peak demand, again under the adverse
25 hydro conditions. That's the critical water, isn't it?
26 A Yes, sir.
27 Q Would you read those for us again, the margins?
28 A Can I read the maximum-minimums again if I get them straight?

1 Q Sure.

2 A 21.7 percent margin in December of 1981, and 31.4 percent

3 margin in August of 1979. The others are in between those

4 two.

5 Q And then for energy for 1978 through 1981 on the next page.

6 A The mimimum is 20.9 percent in August of 1981, and the maxi-

7 mum is 28.2 percent in December of 1979.

8 Q You don't customarily talk about the energy reserves, do you?

9 A Not as such.

10 Q Turn to page 67, please. Now, that's the Northwest Power

11 Pool described in what manner? What are they listing there?

12 A Describes all the systems in the --

13 MR. BELLINGHAM: What page is this?

14 WITNESS: This is on page 67.

15 A It has the year and the firm load, month, net resources and

16 transfers from the margins.

17 Q If we were to look at those, Mr. Hofacker, we would know that

18 would include, in addition to the Bonneville Power Administra-

19 tion and the BC Hydro and Power Authority, a number of PUD's,

20 the Idaho Power Company; you, the Montana Power Company; the

21 Pacific Power and Light Company; the Portland General Electric

22 Company; Puget Sound Power and Light Company; and the Seattle

23 City Light; Tacoma City Light; U.S. Corps of Engineers; U.S.

24 Bureau of Reclamation; Utah Power and Light; Washington Water

25 Power Company; and the West Kootenai Power and Light Company,

26 and some other small nonmember systems in the Northwest Power

27 Pool, isn't that right?

28 A As previously described, yes, sir.

1 Q That'd be all the privately owned investor utilities, a num-
2 ber of the PUD's and the BPA, plus the two folks that operate
3 the facilities for the BPA?
4 A Yes, sir.
5 Q What does that show in terms of average August peak in hydro
6 and December peak in 1975 and '76?
7 A The average August peak in 1975 margin, or do you want a per-
8 cent? 45 and a half percent margin in August, 1975. We'd
9 expect that because we're a winter peaking area. And the
10 December, '75 is 22.9 percent.
11 Q And under adverse hydro?
12 A Adverse hydro, the percent of peak, very, very little as you
13 can see. It's the same numbers, essentially 45 and 23.
14 Q That somewhat surprises me. I wonder if you could explain
15 that for me, Mr. Hofacker. As I understand it, adverse hydro
16 means you have less hydro available to you than average hydro,
17 do you?
18 A You have less energy from hydro available to you, not capabil-
19 ity.
20 Q You may have just as much capability, indeed, maybe a little
21 bit more?
22 A Yes, sir. Well, it maybe a little less, too, depending upon
23 the heads on the -- your hydro plants at that time of the year
24 Q It shows here that in December of '75, you're just going to
25 have a shade more of hydro available to you under adverse than
26 under average conditions for December peak, isn't that right?
27 A Yes, sir.
28 Q In 1976, what does it show as the average and adverse hydro

1 peak in August and December?

2 A August, 1976, 40.3 percent; December, 1976, average hydro

3 would be 23.0 percent margin of peak. Under adverse hydro

4 the August peak in '76, there's a surplus of 42.4, and in

5 December 23.0 percent.

6 Q Doesn't that strike you as an awful lot of peak power that's

7 available in August of 1975 and 1976, 42.4 percent?

8 A Not for August, no, sir.

9 Q Well, that happens all the time; it's not unusual, is it?

10 A Because we don't have our peaks in August, and you have to

11 provide capability for your peak.

12 Q What do you do with all that extra power that isn't necessary?

13 A You use it for maintenance, or you can sell it as surplus to

14 somebody.

15 Q Who do you sell it to?

16 A Whoever has a need and wishes to buy it.

17 Q Now, in the Rocky Mountain Power Area, is the Montana Power

18 Company also included?

19 A I don't believe it is, no, sir, I don't think it's in that.

20 Q That's the Colorado, Wyoming area, and even though you have a

21 little bit of a load there, you're not included there, right?

22 A We are not.

23 Q Is the Pacific Power and Light Company included there?

24 A Their Wyoming properties are, yes, sir.

25 Q Are they listed on page 69 of the report?

26 A They are. Wyoming Division, it says.

27 Q What's the situation in the Rocky Mountain Power Pool as re-

28 ported on page 69. Is it very much different from the North-

1 west Power Pool?

2 A Some of their surpluses in the August are considerably less,

3 but the December are not too widely different. You're getting

4 south, so you're getting more summer peaks.

5 Q If you'd take a look at page 68, please, Mr. Hofacker.

6 A I have it.

7 Q Do you see the discussion under Installed Reserve Criteria?

8 A I do.

9 Q There we have the statement that the Northwest Power Pool

10 system serves this large geographical area of Oregon, Washing-

11 ton, Idaho, Utah, Montana, Wyoming, California, and the prov-

12 ince of British Columbia. It says installed reserve criteria

13 for the entire pool area have never been formulated. What

14 does that mean?

15 A It's as I've been saying. We're negotiating now, trying to

16 do this very thing. The installed reserve criteria for a

17 large portion of the area has been set up by contract in the

18 Pacific Northwest Coordination Agreement, and that was done

19 in 1964, but that didn't include everybody in the Northwest

20 Power Pool.

21 Q Who's not included?

22 A Idaho Power, for one. Utah Power and Light for another.

23 Q Why not?

24 A Because they were not party to the Pacific Northwest Coordina-

25 tion Agreement.

26 Q Are they now?

27 A No, sir.

28 Q Is there some movement afoot to bring them in?

1 A If there is, I'm not aware of it.

2 Q Do you mean that the Idaho Power Company and the Utah Power
3 and Light Company are free to sell whatever reserves they
4 want without reference to the Pacific Northwest Coordination
5 Agreement?

6 A There have been agreements between subgroups. Like we've had
7 an agreement with a subgroup, called this Amps Agreement that
8 came into being in 1968, I believe it was, of the five com-
9 panies to that, agreed, and that included Idaho and Utah, and
10 now in the --

11 Q Is that the agreement that provided that each party would
12 maintain not less than 10 percent of its estimated system
13 annual peak firm load as a reserve capacity?

14 A Yes, sir, and then at the present time, under the expanded
15 inter-company pool, Utah, Idaho, and ourselves, as well, are
16 parties to that agreement, and that agreement is addressing
17 itself to reserves, as well.

18 Q Turn to page 245, please.

19 A I have it.

20 Q The area serviced by the Western Systems Coordinating Council
21 constitutes 1.9 million square miles of service territory,
22 does it not?

23 A Yes, sir.

24 Q And that includes a peak demand of 61,000 megawatts in the
25 1972-73 winter, and you'd expect it to be even higher than
26 that now, wouldn't you?

27 A I would think so.

28 Q Of all of the regional reliability councils around the country,

1 the Western Systems Coordinating Council comprises almost one-
2 half of those, does it not, service area?
3 A The service area, one-half the service area, yes, sir, but
4 much less than that as far as the total loads.
5 Q Yes, but in terms of service area, it's about one-half?
6 A Yes, sir.
7 Q Now, there is, of course, as can be expected for such a large
8 geographic area, wide variations in the conditions in which
9 the electric power is generated, transmitted, and delivered?
10 A Yes, sir.
11 Q As a result of those wide ranges of conditions, the bulk power
12 systems within the Western Systems Coordinating Council are,
13 in fact, interconnected on the equivalent of an interregional
14 basis, arent' they?
15 A Yes, sir.
16 Q Page 246. You see the listing under the Northwest Power Pool
17 that includes the Montana Power Company with an asterisk?
18 A Yes, sir.
19 Q And, of course, the Utah Power and Light Company is also in-
20 cluded there with an asterisk?
21 A Yes, sir.
22 Q The reason for that is that both the Montana Power Company and
23 the Utah Power and Light Company are also included on page 246
24 as part of the Rocky Mountain Power Pool?
25 A Yes, sir.
26 Q Why weren't they included in the Rocky Mountain Power Pool on
27 page 69 of the report?
28 A Because, as I believe I said the other day, our membership in

1 the Rocky Mountain Power Pool is much less oriented to opera-
2 tions of our system than it is with the Northwest Power Pool.
3 Q You allow Utah Power and Light to sort of run that part for
4 you?
5 A Well, the Rocky Mountain Power Pool, we're in there to be
6 informed, as much as anything, because we have not much -- we
7 have our stronger ties with members of the Northwest Power
8 Pool and none, other than with Pacific Power and Light's
9 Northern Division that are a member of the Rocky Mountain
10 Power Pool. You'll notice Idaho Power is a member of the
11 Northwest, but not also a member of Rocky Mountain Power, and
12 we have close ties with Idaho Power.
13 Q The other members of the Rocky Mountain Power Pool, in addition
14 to Utah Power and the Pacific Power and Light Company Wyoming
15 Division, are the U.S. Bureau of Reclamation, the Colorado Ute
16 Electric Association, the Nebraska Public Power District, the
17 Public Service Company of Colorado, and the Southern Colorado
18 Power Division, isn't that right?
19 A Yes, sir. I didn't know you were waiting for an answer.
20 Q Now, you had told me something about the Arizona Public Serv-
21 ice having some interconnection with it. Which power pool
22 is it under?
23 A They're in WSCC, and I assume they're part of one of the power
24 pools here. I never really addressed myself as to which one
25 it was. They have interconnection with Utah Power and Light
26 on the southern portion of Utah territory.
27 Q You kind of expect them to be in that same one with Utah and
28 Colorado, wouldn't you?

A Well, I'm not so sure that I would. Well, I'm surprised that they aren't listed there. I'll have to let it go at that. I don't know why.

Q If they're not in the Rocky Mountain Power, they'd have to be in the California Power Pool or the New Mexico Power Pool, wouldn't they?

A Maybe they're in no power pool. I thought they were.

Q I thought so, too. Now, let's see if we can get another way of looking at the general load area in the Western Systems Coordinating Council. Take a look at Exhibit C filed with your Long-Range Plan of 1973. That's the report of the Western Systems Coordinating Council for December 31, 1972?

A Yes, sir.

Q If you'll turn to the first map that appears in that publication, that describes the four power pools by number and by area, with a dotted line, does it not?

A Yes, sir.

Q As far as you know, it's accurate, is it not?

A To the best of my knowledge.

MR. SHENKER: I would like to have this marked.

HEARINGS EXAMINER: All right.

(DEPARTMENT OF NATURAL RESOURCES' PROPOSED EXHIBIT 10 MARKED FOR IDENTIFICATION)

WITNESS: Would it help if adding the title, would be General Load Areas. It would be easier when you look up what that exhibit is.

MR. SHENKER: DNR Exhibit #10, the Western Systems Coordinating Council General Load Areas Divided into the

1 Four Pools, right?

2 WITNESS: It'll be easy to find now.

3 Q To get back to the mystery of the Arizona Public Service Com-
4 mission, by looking at the map, you would think that that
5 would come into the Pacific Southwest Power Pool in Section
6 4-C, would you not?

7 A Yes, sir, that was my assessment before I looked at that other
8 publication.

9 Q The Rocky Mountain Power Pool appears to include only the
10 states of Wyoming, South Dakota, Nebraska, and Colorado, with
11 perhaps a little slice of Kansas?

12 A Yes, sir.

13 Q There's something to the east of the line drawn around the
14 Northwest Power Pool in the state of Montana, isn't there?

15 A Yes, sir.

16 Q And there's still Montana room left over?

17 A Yes, sir, that's the MDU service area, essentially, Montana-
18 Dakota Utilities.

19 Q Who's power pool are they in?

20 A They're in the -- there are two designations there, and I --
21 the MAP is one, midarea kind of power pool, and then there's
22 the public groups in this area. They have what they call a
23 Missouri River Basin Systems Area. There's a third designa-
24 tion that gets into this area, but anyway, MAP is essentially
25 the area that's to the east of us.

26 Q The states of North Dakota, South Dakota, Nebraska, and the
27 rest of Montana are in somebody's power pool, aren't they?

28 A They are, to the east of us.

1 Q There's something called the Northern Great Plains Resources
2 Program; have you heard of that?
3 A Northern Great Plains Resources Program, there's, I believe, a
4 study going on at the present time of those in that area.
5 Q That includes the states of North Dakota, South Dakota, Montana,
6 and Wyoming and Colorado, does it not?
7 A Yes, essentially the areas that the Bureau of Reclamation has
8 facilities in, I believe.
9 Q It happens to coincide, does it not, with Region #8 of the
10 Environmental Protection Agency of the United States Govern-
11 ment?
12 A It may very well; I never checked that.
13 Q You would agree, would you not, Mr. Hofacker, that the des-
14 cription in the foreword to this particular volume, Exhibit C
15 to your Long-Range Plan of 1973, page 1, what you're obliged
16 to do, and what all the other members of the Western Systems
17 Coordinating Council are obliged to do, is to inform the
18 executive committee of this council of your plans for genera-
19 tion or transmission as those plans may significantly affect
20 the reliability of your operation, or of any interconnected
21 bulk power system with you, and that you must report any
22 decision as to changes or alterations proposed in your elec-
23 tric systems, whether in generation, transmission, intersystem
24 communication or control, or protective equipment? That's
25 your obligation, isn't it?
26 A As we discussed the other day, exactly, sir.
27 Q Those reports are supposed to be made once a year?
28 A Yes, sir.

1 Q It's now the operating procedure, as of November 30, 1972,
2 as determined by the executive committee of the Western Sys-
3 tems Coordinating Council, that the report from each member
4 must make full disclosure of all generation projects, trans-
5 mission lines, and other facilities for 10 years?
6 A Yes, sir.
7 Q The reason for that, I take it, is that the Planning Coordina-
8 tion Committee of the Western Systems Coordinating Council
9 has to formulate and maintain the comprehensive 10 years plan
10 for the whole area?
11 A Yes, sir.
12 Q Is somebody from the Montana Power Company on the Planning
13 Coordination Committee?
14 A Yes, sir, and has been since the inception of the agreement.
15 Q Who is that.
16 A Now, it's W. H. Blankmeyer. I was, at one time.
17 Q You preceeded him?
18 A I did.
19 Q Page 5. Since 1969, Mr. Hofacker, it has been the case that
20 as soon as a facility is first reported to the Western Systems
21 Coordinating Council, all subsequent reports should include
22 that facility until it is in service or it has been canceled,
23 isn't that true?
24 A Yes, sir.
25 Q One of the ways that somebody would explain a change in their
26 plan, for example, would be on page 9, under the Northwest
27 Power Pool West Group Subarea where the United States Army
28 Corps of Engineers, at the Asotin Dam on the Snake River,

1 explained that their project, previously reported for 155 and
2 156 megawatts, respectively, on units 1 and 2, for April of
3 1980, had been delayed indefinitely?
4 A Yes, sir.
5 Q And another report, which would be expressive, is such as
6 reported on page 12 where the Pacific Power and Light Com-
7 pany, with respect to the Wyodak Plant in Gillette, Wyoming,
8 reported a 330 megawatt facility which was a change from its
9 previous unit size of 275 megawatts, and reported for the
10 first time that this was a joint project with tentative par-
11 ticipation of 40 percent from the Puget Sound Power and Light
12 Company, 35 percent --
13 A Public Service of Colorado.
14 Q From the Public Service of Colorado, and the remaining --
15 A Black Hills Power and Light.
16 Q What percentage was that?
17 A 25.
18 Q Then, of course, if you wanted to simply show that the project
19 was canceled, then you would do, for example, as was done in
20 the East Group Subarea. I think that's page 13 -- 14. Are
21 you with me?
22 A I am, sir.
23 Q East Group Subarea, Northwest Power Pool, UPLC, who's that?
24 A East Group Area, Northwest Power Pool, you're saying. This is
25 New Mexico Power Pool on page 14. Am I looking on the wrong
26 page? Forty-three.
27 Q UPLC, who's that?
28 A Utah Power and Light Company.

1 Q They wanted to report on the affected facility at Camp
2 Williams in Glen Canyon. They were talking there about a
3 facility that had been previously reported for commercial
4 operation July of 1976. They simply said it was deleted,
5 didn't they?
6 A Yes, sir, this is a series capacitor installation.
7 Q Those are the kinds of reports that can be made to the Western
8 Systems Coordinating Council to be expressive about what your
9 plans are?
10 A Yes, sir.
11 Q Now, at the present time, Mr. Hofacker, do you have any coop-
12 erative agreements with the Bureau of Land Management with
13 respect to generating facilities?
14 A Not to my knowledge.
15 Q Does the Bureau of Land Management operate any generating
16 facilities?
17 A If they do, I'm not aware of them.
18 Q What relationship do you have with the Bureau of Land Manage-
19 ment generally in the operation of your system?
20 A Having to do with right-of-way for transmission and the like.
21 Q Why are you refusing to pay them the $250,000 that they have
22 sent you as a bill for right-of-way expenses?
23 A I have nothing to do with that, sir.
24 Q You know about it, don't you?
25 A I'm aware of it, yes, sir.
26 Q I didn't say you had anything to do with it. I'm just wonder-
27 ing why you, being the Montana Power Company, were refusing
28 to pay that bill.

1 A I could make a supposition; they think it's not a legal charge.
2 Q Not a legal charge. You have no intention of paying it, is
3 that right?
4 A I didn't say that, sir.
5 Q Do you know?
6 A I don't know.
7 Q Now, we were talking earlier, Mr. Hofacker, regarding the
8 various cities in Montana. The six largest cities, I believe,
9 are the subject of Exhibit #7 for the Department of Natural
10 Resources. And I'm confused on the relationship between what
11 you provide by way of power to those cities and the descrip-
12 tion that appears on page 5 of your 1973 Long-Range Plan. Do
13 you see where, on page 5, there's a description of the peak
14 demands by load centers for specific named areas in the state
15 of Montana?
16 A Yes, sir.
17 Q Can you explain to me what it means when it shows 700 mega-
18 watt peak demand in Butte-Anaconda load center in 1970?
19 A I believe this has to do with substation peak, substations in
20 that area. This is a noncoincidental peak, I would believe.
21 Q You don't want anybody to believe that there's actually 700
22 megawatts of electricity that was delivered to the Butte-
23 Anaconda area in 1970, do you?
24 A No, but these are load centers taken from the National Power
25 Survey, and the manner in which the Federal Power Commission
26 set up these areas, and there were large areas that they
27 took in, so this is far more than just the Montana Power Com-
28 pany; it includes loads not ours. Everything, for instance,

1 in the Butte area would include a Stauffer Chemical load --
2 Q The Bonneville services?
3 A And the Kalispell-Missoula area could well be some of the BPA
4 loads over there, so this has -- our load is in there, but
5 is not necessarily the same as that by a long ways.
6 Q Well, we previously discussed in your testimony, with respect
7 to Exhibit #7 for the Department of Natural Resources, a
8 listing of the various cities in Montana which you actually
9 served. That's the load that you have had in those communi-
10 ties, isn't it?
11 A Yes, and it depends on how far out you go from that community
12 to get to a load center. It's confined to the city itself,
13 but this has very little, if any, relationship to that.
14 Q What relationship does this description by the Federal Power
15 Commission have with the Montana Power Company's own load?
16 A Only that the Montana Power Company's own load is included in
17 this load.
18 Q Did you say that in your 1973 Long-Range Plan?
19 A We say that this is the same National Power Survey, shows the
20 demand in certain Montana supply areas.
21 Q You don't say that the --
22 A And this national power supply is the total load in those areas.
23 Q Did you put any kind of a disclaimer into the report in 1973
24 to indicate that the Montana Power Company was not claiming
25 that the loads as shown from 1970 to 1980 to 1990 are Montana
26 Power Company loads?
27 A Why should we, sir. I see no reason to put them in.
28 Q I'm sure you didn't, but I'm asking you whether you actually

1 did make the disclaimer?
2 A Because there was no need for a disclaimer, sir.
3 Q The answer is no?
4 A No. Yes, sir.
5 Q Mr. Hofacker, I neglected to ask you earlier, sir, in connec-
6 tion with Exhibit #13, when you were trying to find out the
7 distances of rail haul inside the state of Montana, you
8 used a regular road atlas, didn't you?
9 A Rand-McNally, yes, sir.
10 Q Why didn't you use rail miles from existing rail track?
11 A I can't answer that, other than I would assume the two cor-
12 relate with each other pretty well.
13 Q You assume that?
14 A I would assume that Mr. Davenport looked into this, and I did
15 not personally.
16 Q Well, you know that Mr. Davenport is the one who used the road
17 atlas?
18 A I do.
19 MR. SHENKER: I'm moving on to a new subject, Mr.
20 Davis, which I can continue on. It'll probably take me
21 20-25 minutes or so. Do you want to take a break now, or
22 do you want us to keep going.
23 HEARINGS EXAMINER: Whatever's your pleasure and Mr.
24 Hofacker's and Mrs. Blacker's. Gwen, how are you?
25 MRS. BLACKER: I'm fine.
26 HEARINGS EXAMINER: Well, why don't we keep going
27 until 5.
28 Q Let's talk, Mr. Hofacker, some about the causes of concern in

1 load forecasting. One of the concerns we've already talked
2 about, and that's financing problems; we don't want to have
3 more of a resource coming on than we need, because it's very
4 costly. Another concern that we've talked about is the in-
5 evitable delay that comes when you do make plans for projects.
6 But one aspect that we haven't talked about, itself, is the
7 subject of load forecasting error. Now, who knows the answer
8 to the question of whether the economic downturn of 1974 is
9 going to be matched by a spurt at some later point in time?
10 A Only by our looking at what has happened previous, at reces-
11 sions, and judgment of that by several people, we deemed that
12 it would by 1980 be back.
13 Q Is it not true that the recent developments in rapid increase
14 of energy prices of all kinds, downturn of economic activity,
15 sluggage growth of electricity demand ever since the Arab
16 embargo, curtailments of natural gas service expansion, some
17 embargoes of natural gas hookups, and some of the talk that
18 we've had about moving toward oil import independence, in
19 part through increased reliance on fossil fuel fired facili-
20 ties, have really created a good deal of uncertainty about the
21 growth of future electrical loads?
22 A Yes, it has. However, many have studied this, and it appeared
23 to them that the growth is apparently going to get back to
24 about 6 percent or better nationally.
25 Q Isn't the question really being asked today, Mr. Hofacker, as
26 to whether recent historical growth rates, prior to 1972,
27 would re-emerge but from a lower than anticipated base, or
28 will growth rates continue to be lower than in the past? Aren't

1 those questions still being asked?

2 A They are being asked, yes, sir.

3 Q But you're not asking them after 1977, are you?

4 A We asked them, and made the decision that it would not be.

5 There had to be a decision made, so we made it.

6 Q And is it not the case, within the utility industry today,

7 that's there's an increased demand, in fact, need for the

8 application of econometric estimation techniques?

9 A As I've said before, we will be increasing our studies with

10 these tools because of the magnitude of the investments in-

11 volved and these unknowns that you're talking about, yes, sir.

12 Q Across the country today, it is true, is it not, that utilities

13 are finding it necessary to adapt their past methods of plan-

14 ning for system expansion, in order to include the effects of

15 considerably more uncertainty in load growth than ever here-

16 tofore?

17 A Their judgment is that this is so, but history will have to

18 prove whether it's right or not.

19 Q In determining how to provide adequate power supply, it is

20 true, is it not, Mr. Hofacker, that you have to answer each of

21 the following questions? First, what's an adequate level of

22 supply? Second, what's the relationship between supply and

23 cost? Third, how can the effect of inadequate supply be in-

24 cluded in system planning processes? And fourth, what prin-

25 ciples should guide governmental and utility actions if sup-

26 ply is inadequate? Aren't those the questions that have to be

27 answered?

28 A And we assess every one of those, and we have for years, sir,

1 to some degree.

2 Q Those aren't easy questions to determine, are they?

3 A They are not, no, sir. That's why judgment has to enter into

4 this.

5 Q And those questions are bound to generate a certain amount of

6 controversy, aren't they?

7 A They are, as you can well see.

8 Q And they do generate a certain amount of controversy among

9 utilities and among systems and among regulatory agencies all

10 over the country?

11 A Yes, sir. Anytime you're trying to forecast what's going to

12 happen at a future date, there's going to be no two that agree

13 exactly.

14 Q One of the reasons for the difficulty in answer those ques-

15 tions is that they are, today, novel questions, complex ques-

16 tions, and they have great economic importance, isn't that

17 true?

18 A They certainly do.

19 Q Now the standard definition in the past for the utility com-

20 panies, with respect to what is inadequate supply, was always

21 very simple. If demand exceeded supply at current prices,

22 then you had an inadequacy of supply, wasn't that it?

23 A I'm not sure how the current prices are really included in

24 that, but the statement sounds reasonably good to me.

25 Q But that deceptive truth of the past, in its simplicity, is

26 not going to be a sufficient guide from the future, is it?

27 A It may well prove not to be.

28 Q Because the fact is that in the economic sense it is certainly

1 true that demand differs from the sense of either a customer
2 of system load, isn't it?
3 A Yes, sir, and any two experts will not agree either, neces-
4 sarily. Only history is going to prove who is right.
5 Q Actually, demand can be inadequate in terms of electric serv-
6 ice, either in terms of load, that's kilowatts of demand; or
7 the volume of consumption, which would be kilowatt hours of
8 energy; or thirdly, in terms of the reliability, that is,
9 expected service interruptions. All of those might be inade-
10 quate demand, wouldn't they?
11 A Yes, sir.
12 Q In order to have a proper definition of demand, therefore,
13 you have to include all of those factors, don't you?
14 A Yes, sir.
15 Q When you refer to an acceptable level of a load as demanded by
16 customers, doesn't that mean that the customers are willing
17 to pay as much as it costs to maintain service reliability at
18 the present level?
19 A They are paying it at the present time, so I guess they must
20 be willing to, or that they have no other recourse but to
21 pay it.
22 Q How can you assume, as we sit here today, Mr. Hofacker, that
23 the same customers would be willing to pay the increased
24 costs of guaranteeing further reliability in your system?
25 A Nothing other than judgment, I presume.
26 Q I believe the economists use a term to describe what we've
27 just been discussing as disequilibrium. Have you heard that
28 term used before?

1 A I've heard this, yes, sir.

2 Q Do you know what it means?

3 A I'm not sure I know what it means, sir; I have a vague idea

4 perhaps.

5 Q In economic terms, doesn't it mean that if, for example, the

6 current rates of electricity are too low, that some form of

7 rationing or taxation should be required to hold consumption,

8 in actuality, below what was decided?

9 A Yes, sir, but by who's terms are rates too low? Who decides

10 that they're too low?

11 Q Well, I suppose the economists are taking a step away from

12 society in not having to determine who makes that decision,

13 except that the decision gets made, doesn't it?

14 A It will be, yes, sir.

15 Q Of course, if rates were free to move in the competitive mar-

16 ket, then the economic theory would have -- you wouldn't have

17 that kind of problem.

18 A I don't know that it would eliminate all the problems, but it

19 might.

20 Q Well, rates would rise as high as necessary to choke off

21 customers' desires to consume electricity, wouldn't they?

22 A Why would they raise them that high?

23 Q Because somebody wants to buy them until you get to a certain

24 point.

25 A It would stop at that point, though, would it not?

26 Q That's the point. That's the point at which they would stop

27 unregulating.

28 A Just like any free market would operate, yes, sir.

Q But if you ask for a rapid raise in those rates to solve the same economic problem, then you can't really assume that the consumers are going to be making the same kind of choice as they would have been making in a nonregulated industry where, as the demand rises, the price could rise until the point that the price chokes off the demand, could you?

A Pretty complicated question, but I guess you're right.

Q Well, economics is kind of complicated for some folks, including me, but that is the case in terms of economic theory, isn't it?

A Sounds like it would be.

Q What's the amount of the rate increase that you've asked for from the Public Service Commission of Montana?

A I believe it's in the area of 22 percent on electric.

HEARINGS EXAMINER: Why don't we adjourn until 9 o'clock in the morning. Is that all right with everybody?

MR. SHENKER: Sure.

HEARINGS EXAMINER: Okay, let's adjourn.

(HEARING ADJOURNED AT 5:00 P.M.)

SECTION 10

Heating Systems: Conventional and Solar (Monitoring)